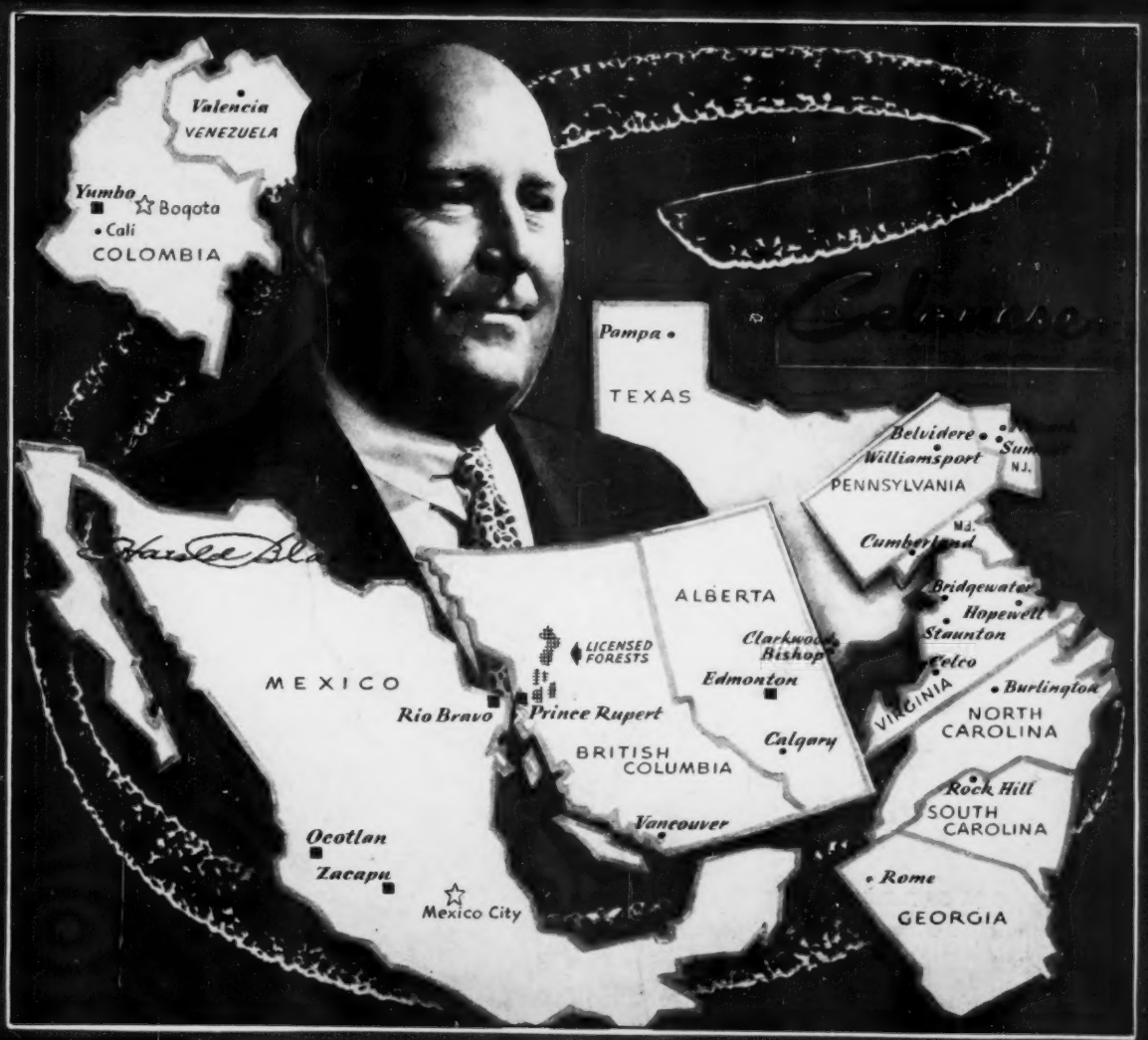
JUNE 1951
Vol. 25 No. 6

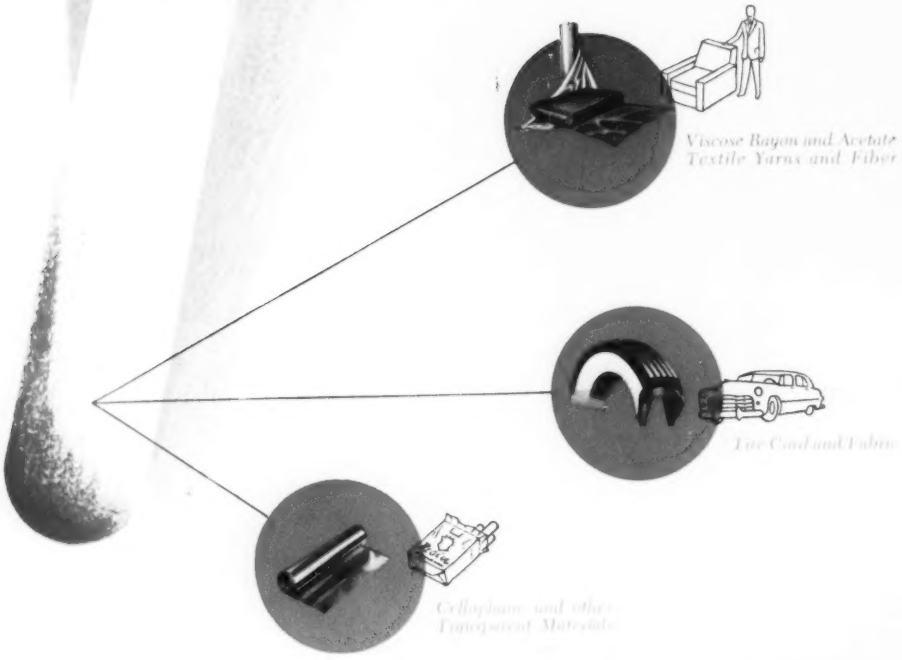
PULP & PAPER



CELANESE CORPORATION OF AMERICA . . . PRESIDENT HAROLD BLANCHET
Explanation of maps, story of entry in pulp world on page 42

HIGHLY PURIFIED WOOD CELLULOSE is a chemical raw material produced by Rayonier by chemically processing wood in our mills. It is used by our customers for conversion to a variety of useful products.

Rayonier research over a period of years has resulted in development of specialized types of wood cellulose, each with physical and chemical characteristics which assure best results in making the end products for which it is used.



RAYONIER
INCORPORATED

PRODUCERS OF HIGHLY PURIFIED WOOD CELLULOSE FOR TEXTILES, TIRE CORD, CELLOPHANE, PLASTICS

EXECUTIVE OFFICES: *122 East 42nd Street, New York 17, N.Y.*
MILLS: *Hoquiam, Port Angeles, Shelton, Washington; Fernandina, Florida*

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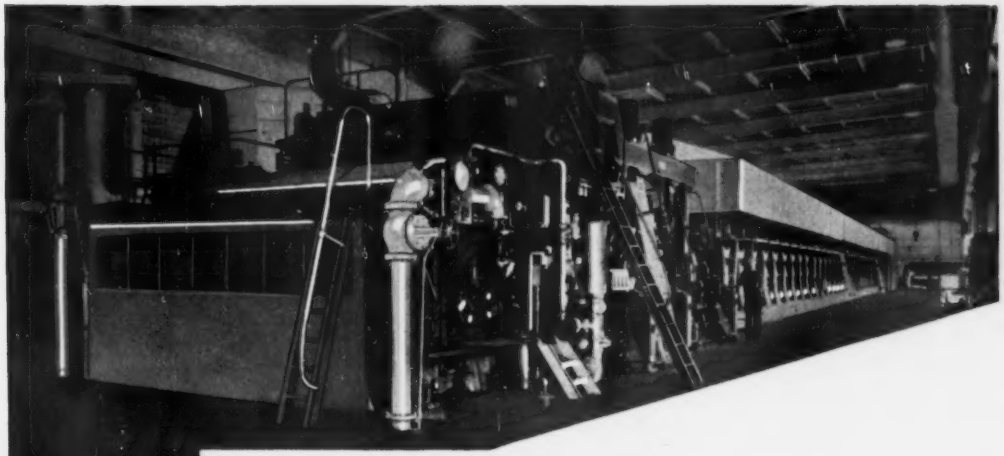


PULP FORMS PAPER FASTER AND FIRMER ON THIS

PUSEY & JONES CYLINDER MACHINE

Pusey & Jones are justifiably proud of their 168" Single Cylinder High Speed Felt Machine*. It reflects the latest developments in the paper-making art.

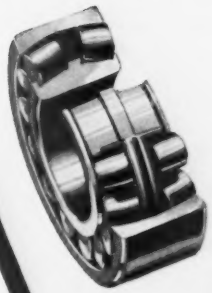
Its design features the Stream-Flow wet end with vacuum type cylinder mold, which permits superior formation at record-breaking new high speeds.

All dryers are equipped with SKF Spherical roller bearings, using the SKF rocker mounting construction on the front sides.

Pioneered by SKF, the Rocker Mount Design permits expansion and contraction of the dryers without lateral stresses on bearings or side frames.

Once again, in the paper-making industry, as in so many others, SKF blazed a trail toward more economical, efficient, reliable production—once again earns preference by all industry. 7245

*For information on this and other paper-making machinery, write Pusey & Jones Corp., Wilmington 99, Del.



8 REASONS WHY SKF IS PREFERRED BY ALL INDUSTRY

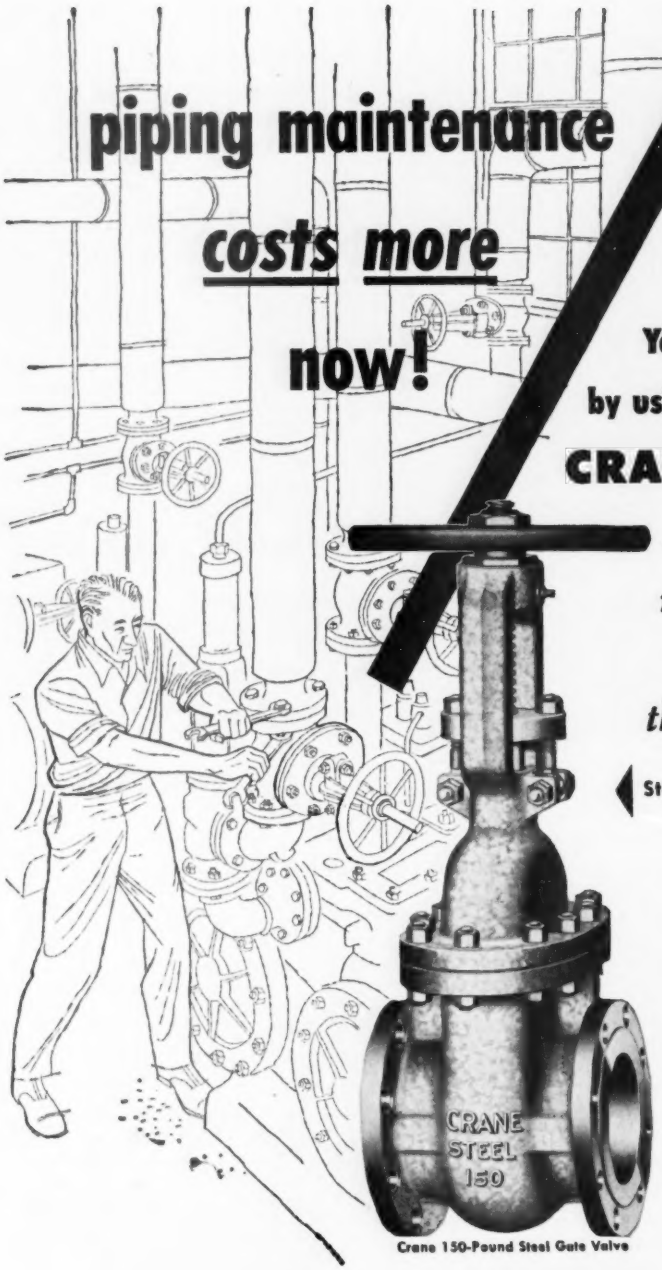
integrity
craftsmanship
metallurgy
tolerance control
surface finish
product uniformity
engineering service
field service

SKF

BALL AND ROLLER BEARINGS

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.
—manufacturers of **SKF** *and* HESS-BRIGHT *bearings.*

piping maintenance costs more now!



Crane 150-Pound Steel Gate Valve

You spend less for it by using Dependable Quality

CRANE VALVES

. . . That's why more Crane Valves are used than any other make

Steel valves that stay on the job

You can practically forget valve maintenance worries with Crane Cast Steel Wedge Gates. They're unusually rugged . . . amply reinforced at all stress points. Disc is precision-guided to reduce seating surface wear. Straight-through ports give smooth flow, with minimum turbulence and erosion.

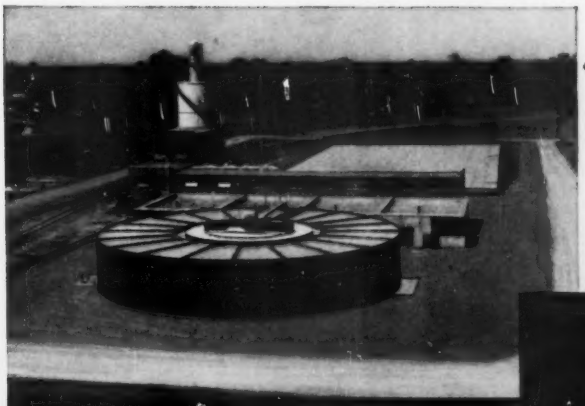
Stuffing box depth and design assure tight stem seal . . . long packing life. Valves available in trim materials for steam, water, gas, oil, and oil vapor services.

Ask your Crane Representative about the better quality and greater dependability of Crane valves—your assurance of on-the-job performance that spells lower final cost.

CRANE

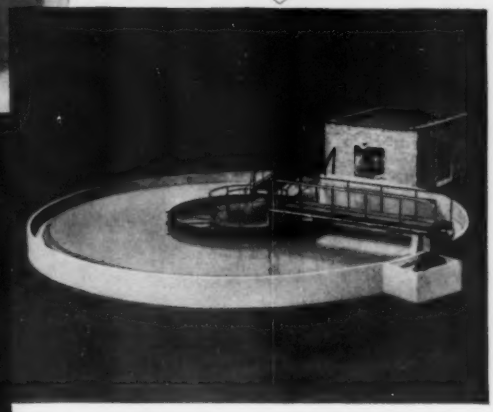
CRANE CO., *General Offices:*
836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING



FROM TREATMENT OF MILL SUPPLY

TO TREATMENT OF WHITE WATER..



INFILCO OFFERS A COMPLETE LINE OF *Dependable* TREATMENT EQUIPMENT

Write our executive offices in Tucson for Bulletins Nos. 850, 23-409 and other pertinent data on Infilco Water and Waste Treatment Equipment.

BIG mills and small have benefited from the installation of Infilco Water Conditioning Plants. The wealth of experience built into Infilco Equipment affords the user a maximum of capacity in a minimum of space . . provides a consistently uniform, clear and stable effluent ideally suited for process requirements. Repeat purchases of Infilco Equipment by many mills is proof of owner satisfaction.

WATER AND WASTE TREATING EQUIPMENT FOR THE PULP AND PAPER INDUSTRY

Likewise, mills with white water problems have logically turned to Infilco, for Infilco pioneered many of today's outstanding industrial waste treatment advances. In many cases these mills have found that the installation of Infilco Equipment not only enabled them to comply with stream pollution control regulations but also afforded them worthwhile savings by recovering valuable stock for reuse.

What is your mill supply or white water treatment problem? Infilco can lend you valuable aid in finding the *one best solution!*

Quality Engineered for Quality Performance

INFILCO INC.

TUCSON, ARIZONA

WITH OFFICES IN PRINCIPAL CITIES

INFILCO

• BETTER WATER CONDITIONING AND WASTE TREATMENT SINCE 1894 •

WORLD'S LEADING MANUFACTURERS OF WATER CONDITIONING AND WASTE TREATING EQUIPMENT

3 metal failure problems . . . solved by the use of Nickel and Nickel Alloys

ABRASION and corrosion were minimized in this hydrapulper by using Lukens Nickel-Clad Steel. Machine is specially designed to replace less efficient, more bulky breaker beaters in paper and board mills. It combines the protection of nickel with the economy of steel. Fabricated for Dilts Machine Works Division of Black-Clawson Co., Fulton, N. Y.

Have you a metal failure problem?

. . . this new Inco bulletin may help you solve it

32 pages of practical information on the toughest kind of metal failure problems

This new 32-page Inco bulletin is designed to show you how others have found practical solutions to their material selection problems—*solutions that you can use to advantage.*

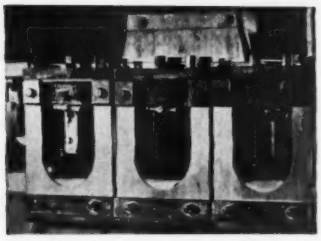
The bulletin discusses various sliming, corrosion and abrasion problems, and explains how tough, long-lasting, corrosion-resistant nickel and nickel alloys have been used to solve them.

These are the problems discussed: Chemical Pulping Equipment and Digesters • Brown Stock Washers—Thickeners — Filters • Screening • Stock and White Water Lines • Bleached Pulp Thickeners and Washers • Sizing, Fillers, and Board Machines • Paper Machines • Paper Machine Rolls • Recovery Processes • Pumping Equipment.

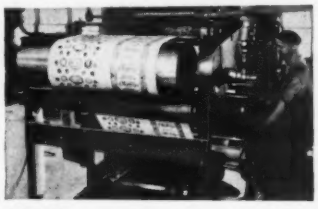
The bulletin is simply written and contains 64 illustrations of units and actual installations. It also contains 19 tables of valuable technical data which were compiled by Inco's engineering research staff.

Write to Inco today for your free copy of "Practical Solutions for metal problems . . . in PULP and PAPER MILLS." And remember, if you need further information on materials testing, selection, or fabrication, our Technical Service and Corrosion Engineering staffs are ready to help you at any time.

The International Nickel Company, Inc.
67 Wall Street, New York 5, N. Y.



FATIGUE from both vibration and corrosive action is a problem with suction box and shake springs. These were made from age-hardened Duranickel strip by Rice Barton Corp., Worcester, Mass. This new alloy has high mechanical properties and elasticity modulus, and ably withstands vibration and corrosion.



PITTING and rust blemishes were eliminated on this steel waxed-paper chilling roll by applying a 1/16th" Monel cover. Efficiency was stepped up so that machine speed could be increased by one-third. Photo courtesy of Minerva Wax Paper Co., Minerva, Ohio.

EMBLEM OF SERVICE
INCO TRADE MARK
Nickel Alloys

Monel® • "R"® Monel • "K"® Monel • "KR"® Monel • "S"® Monel
Nickel • Low Carbon Nickel • Duranickel®
Inconel® • Inconel "X"®

for low cost, experimental

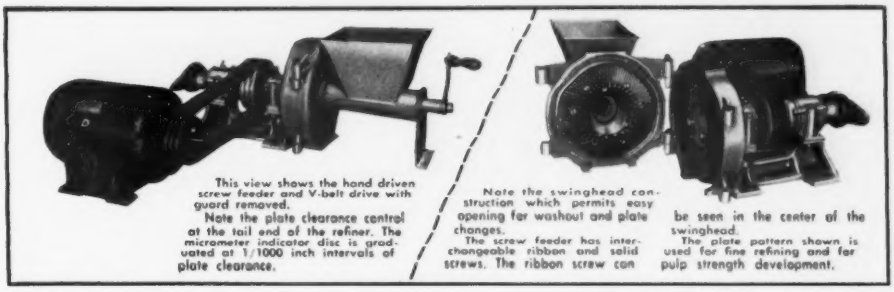
PULPING and FIBER studies

Now . . . you can get "controlled tests" in pulping raw, steamed, or semi-chemically cooked chips, fully cooked pulp, waste papers, straw pulp, Asplund fiber . . .

You can improve on your present pulping and fiber studies . . . and explore new possibilities . . . with the Sprout-Waldron "Lab" Refiner.

Designed for semi-plant-scale defiberizing, pulverizing, decorticating, blending, granulating and other specialized uses—on dry or fluid feed, hot or cold, high consistency or low—the Sprout-Waldron "Lab" Refiner combines simplicity of design and efficiency, with low initial and operating cost. Plate styles for a wide range of applications are available.

SPROUT-WALDRON 12" LABORATORY REFINER



This view shows the hand driven screw feeder and V-belt drive with guard removed.
Note the plate clearance control at the tail end of the refiner. The micrometer indicator disc is graduated at 1/1000 inch intervals of plate clearance.

Note the swinghead construction which permits easy opening for washout and plate changes.
The screw feeder has interchangeable ribbon and solid screws. The ribbon screw can be seen in the center of the swinghead.
The plate pattern shown is used for fine refining and for pulp strength development.

Available with stainless steel construction

In daily use in many laboratories, both private and governmental, domestic and foreign.

Today . . . send for Bulletin 17 which describes this useful basic tool for laboratory and pilot-plant use. Complete specifications are included. Write to Sprout, Waldron & Co., Inc., 32 Waldron St., Muncy, Pa.

SPROUT WALDRON SW SINCE 1846

Sprout·Waldron
Manufacturing Engineers
MUNCY • PENNSYLVANIA

189

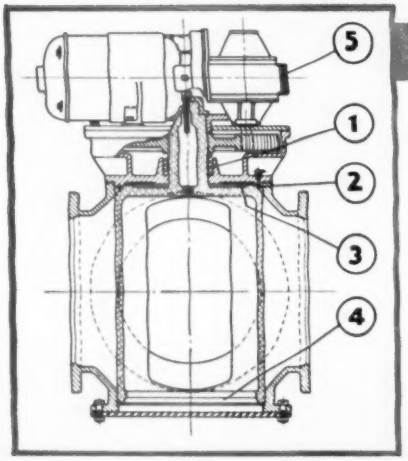
motorized rotary valves

Trouble common to older type rotary valves are eliminated by the Shartle improved design motorized rotary valve.

This versatile rotary valve is ideal for many "out-of reach" locations in the pulp or paper mill, and is especially adaptable to automatic systems with push buttons or automatic controls located at a central control station.

The Shartle rotary valve is flexible in that it can be installed in any position, and is available in designs to suit any paper mill requirement; whether it be for valving a single line or providing flow in any of four different directions from a single inlet.

Available in straight way, two, three, four, or five-way designs; size range from 4" to 24". Constructed of materials, or combinations of materials, to suit paper stock conditions.



DESIGN FEATURES

1. Spring loaded rotor held firmly in position—no rotor drag at bottom of valve.
2. Lubricated packing at sloping shoulders of rotor provides positive seal at all times.
3. No contaminated pockets. Seal prevents entrance of stock to this area thus preventing clogging or jamming of rotor.
4. Open bottom eliminates possibilities of stock accumulation under rotor, and provides stock entrance for bottom inlet type rotary valves.
5. Gearhead motor drive—through cut spur gear and pinion, provides for electric remote control of rotor.

SHARTLE BROTHERS MACHINE COMPANY,
MIDDLETOWN, OHIO

DILTS MACHINE WORKS, Fulton, New York
Divisions of THE BLACK-CLAWSON CO., Hamilton, Ohio
Western Sales Office: Mayer Bldg., Portland, Oregon
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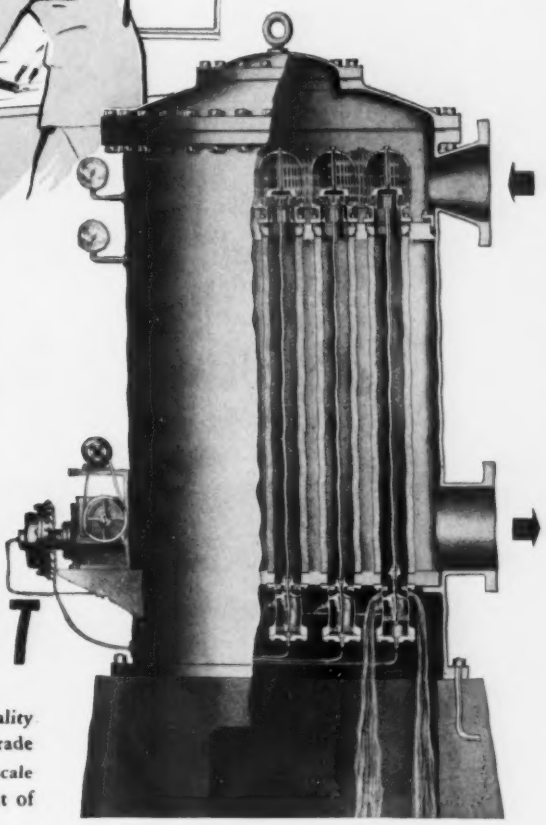
CLEAN PAPER GETS THE PRICE



ADAMS

WATER FILTRATION GETS THE DIRT

In kraft or tissue, book or newsprint—water quality is as critical as chip quality. No matter what grade of pulp or paper you make, sand, grit and pipe scale are expensive when they keep your product out of the top price brackets.

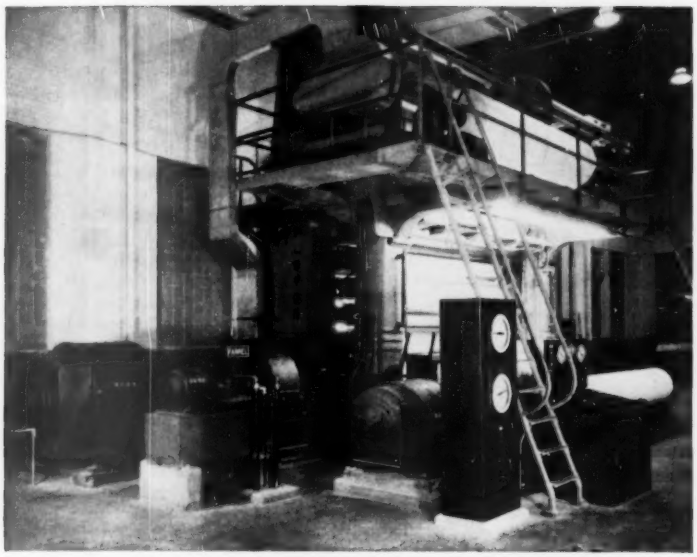
Water filtration with the fully automatic Adams Poro-Screen or Poro-Stone Filter takes out price-lowering impurities *before* they become part of the stock. Continuous backwashing effectively prevents clogging of filter elements—avoids costly, cumbersome cleaning operations.

Remember—in its early stages your product is about 98% water, and most water-borne impurities stay with the stock.

Find out what Adams filtration has done in situations like yours. Write for the new 20 page booklet on water filtration in the Pulp and Paper Industry, Bulletin No. 691.

R. P. ADAMS COMPANY, INC.

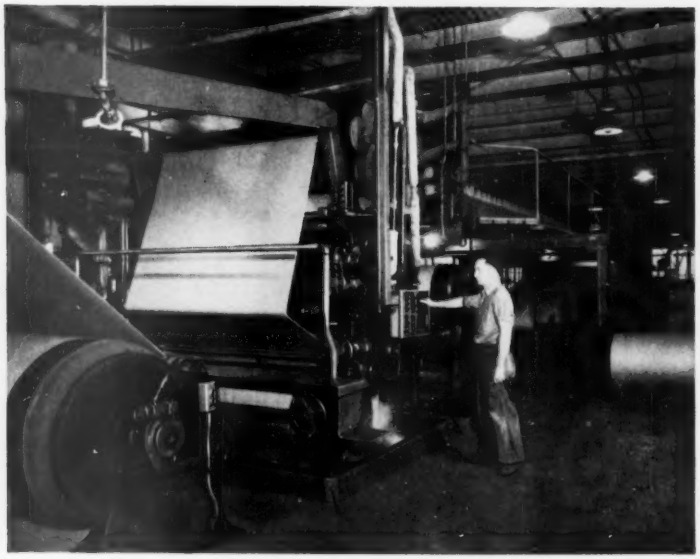
210 EAST PARK DRIVE, BUFFALO 17, N. Y.



FASTER SUPER-CALENDERING!

G-E supercalender drives keep your supercalender ahead of your paper machine by providing faster, smoother acceleration and deceleration to increase your daily output and minimize paper breaks. Uniform threading speeds reduce setting-up time to a minimum. Quick emergency stopping minimizes costly damage to calender rolls. Centralized control simplifies supercalender operation. In this Maine paper mill, the supercalender, unwind and windup units are all electrically driven, automatically holding desired sheet tension.

Get the finished



FASTER CONVERTING!

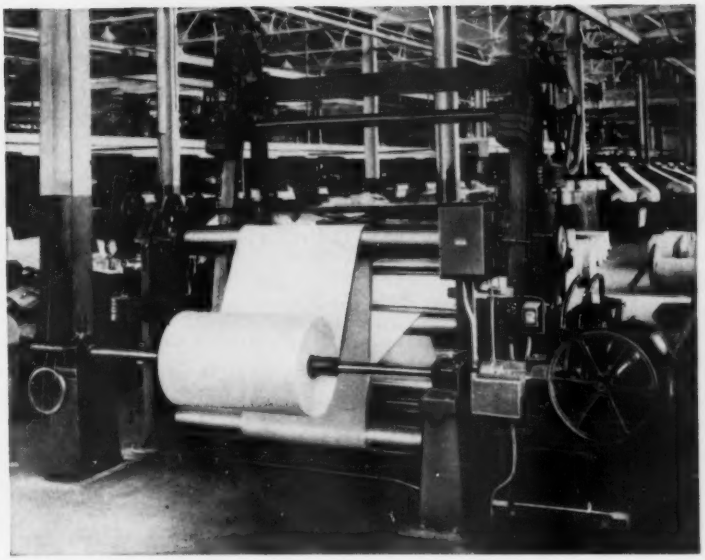
Keeping speeds in step for an entire converting machine from one control point, G-E packaged Speed Variator drives assure faster acceleration, fewer breaks, less waste and time lost. The Speed Variator unit, with motor-generator and a-c and d-c control in a compact package, cuts installation cost, makes future converting-room rearrangement easier and less costly. The G-E co-ordinated drive for this 78-inch double-deck corrugating machine uses centrally-controlled individual d-c motors to drive corrugating rolls, adhesive rolls, straw board feeder, adhesive glue roll, and double-facer roll.

GENERAL ELECTRIC

655-8

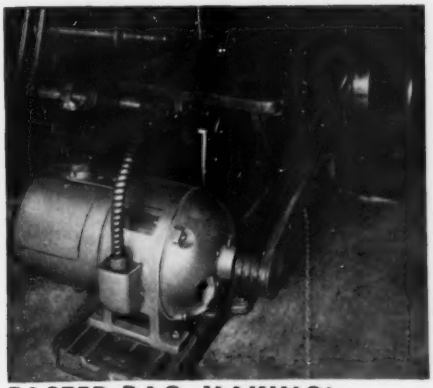
FASTER REWINDING!

Complete, accurate control of sheet speed and tension—for more rolls per day—is provided by G-E rewinder drives. Threading, running speeds and stopping are faster, and every roll is wound to the hardness you want. Soft starts reduce paper breaks. In addition, in this slitting-rewinding operation, G-E side-register control maintains accurate register continuously, automatically—reducing trim waste, increasing production. Spoilage in other finishing-room operations is also reduced by G-E cut-off and color register controls.



paper—faster!

General Electric drives for paper finishing and converting—individually engineered to your needs—can help you step up production—meet customer specifications more economically!



FASTER BAG-MAKING!

Driving a bag-printing machine, this 5-hp G-E Type ACA induction motor is only one of many G-E single-motor adjustable-speed drives that help speed up operations on cutters, conveyors, packaging machines, etc.

In papermaking, every step is important, but the pay-off is in the finishing room! And that's where—to help you maintain top customer satisfaction—General Electric offers you the broadest range of dependable electric equipment to meet your every finishing-room need. Engineered to your individual requirements by experienced industry specialists, it's also backed by quick, on-call service from any of 30 service shops to keep your output uninterrupted. With this G-E team helping you, you boost finishing-room output—meet your customers' quality specifications in less time and at lower cost. Find out from your G-E representative—soon! *General Electric Company, Schenectady 5, N. Y.*

CO-ORDINATED DRIVES

for Paper Finishing and Converting

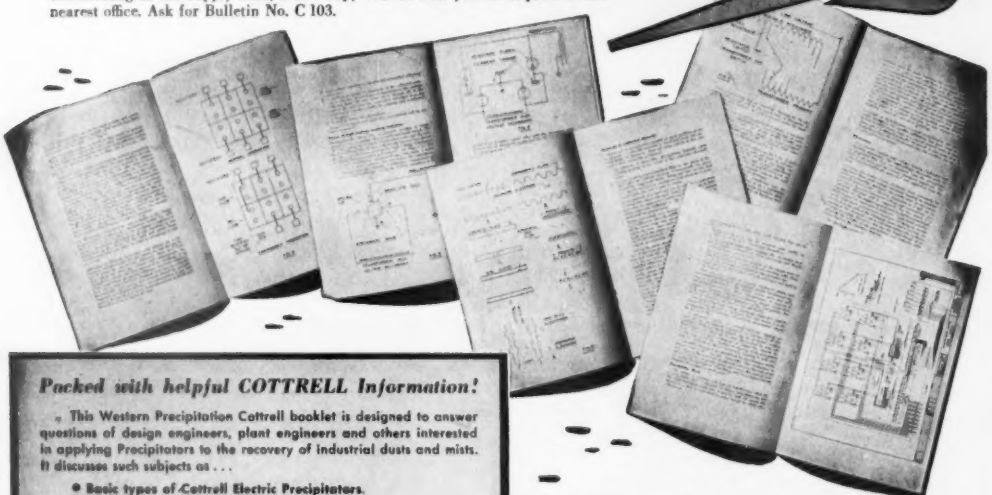
FREE

From Western Precipitation–the organization that pioneered the commercial application of Cottrell Precipitation...

IF YOU ARE ENGAGED in any phase of industry where the recovery of dusts, fumes, fly ash, mists, fogs or other suspensions from gases is a problem, you will find this booklet on the COTTRELL Electrical Precipitator helpful and informative.

Western Precipitation pioneered and installed the first commercial application of the well-known COTTRELL Electric Precipitator–Dr. Cottrell, the inventor, being a member of the company. And for more than 42 years Western Precipitation has consistently led in developing new COTTRELL advancements and techniques for recovering suspensions from gases, both wet and dry.

This 28 page booklet summarizes many of the basic facts you should know about modern COTTRELL Precipitators–the various types available, how they operate, principal types of electrode systems and rectifiers, shell constructions, etc. As long as the supply lasts, a free copy will be sent you on request to our nearest office. Ask for Bulletin No. C 103.



Packed with helpful COTTRELL Information!

This Western Precipitation Cottrell booklet is designed to answer questions of design engineers, plant engineers and others interested in applying Precipitators to the recovery of industrial dusts and mists. It discusses such subjects as . . .

- **Basic types of Cottrell Electric Precipitators.**
- **Principal parts of a Cottrell Precipitator.**
- **Mechanical and Electronic Rectifiers.**
- **Various types of Collecting Electrodes (rod curtains, corrugated plates, dual plates, pocket electrodes, etc.).**
- **Removal of Collected Material.**
- **Factors in Shell Construction (steel, concrete, brick, etc.).**
- **Operating Efficiencies and the Effect of Various Factors on Performance.**

. . . and many other basic Cottrell facts. Write for your free copy of Bulletin C103 today while supplies are adequate!

Western Precipitation is not affiliated with any other company in the field of electrical precipitation except its wholly owned subsidiaries, International Precipitation Corporation and the Precipitation Company of Canada, Ltd. Whether you are now contemplating the installation of a Cottrell Electrical Precipitator, or may be interested in such an installation at a future date, we can and will serve you in any part of the United States or other countries.

NOW SELLING

COTTRELL Precipitators
MULTICLONE Collectors
TURBULAIRE Spray Dryers

in all parts of the U. S. A. and foreign countries.

WESTERN Precipitation CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1017 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
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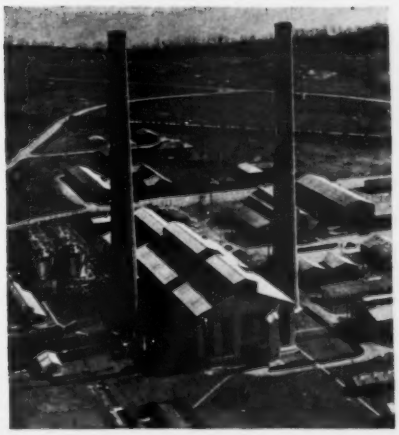
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

SULPHUR

*Interesting Facts Concerning This Basic Raw Material from the Gulf Coast Region

*MINING



The process of mining sulphur, as developed by Herman Frasch, takes advantage of the fairly low melting point of sulphur (about 240° Fahrenheit). The process resolves itself into three parts: one, operating a power plant that heats and pumps to the field large quantities of water; two, distributing the hot water through wells to melt the underground sulphur, and raising the melted sulphur to the surface; three, cooling and solidifying the sulphur in large vats from which it is broken and loaded into cars for shipment.

The power plant and water reservoir, as well as the vats and permanent structures, are placed at some distance from the sulphur deposit to avoid possibility of damage from surface subsidence, resulting from extraction of the underground sulphur.

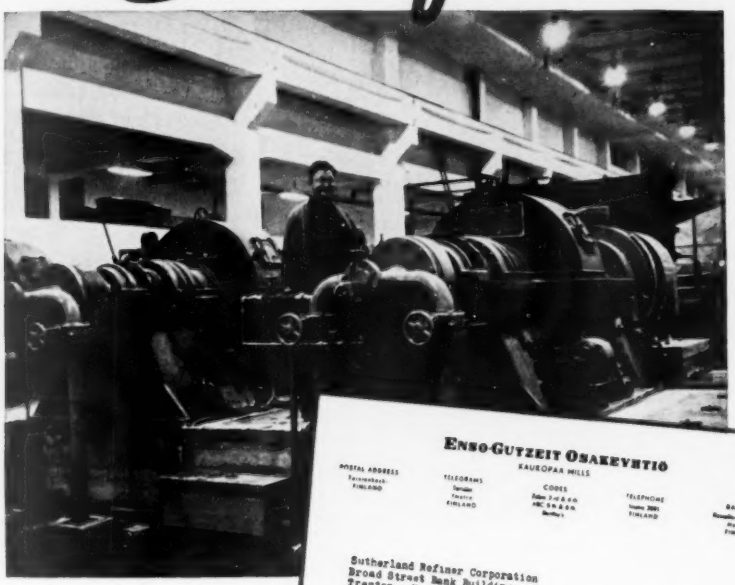
Loading operations at our Newgulf, Texas mine

TEXAS GULF SULPHUR CO. INC.

75 East 45th St. New York 17, N. Y.

Mines: Newgulf and Moss Bluff, Texas

Solid Satisfaction



Two of the four 42-inch Sutherlands in Kaukopää Mills, Imatra, Finland

ENSO-GUTZEIT OSAKEYHTIÖ
KAUKOPÄÄ MILLS

Sutherland Refiner Corporation
Broad Street Bank Building
Trenton, New Jersey
U S A

PH/EHS — December 14,1950

Gentlemen:

This is to confirm our cable of today reading as follows:

WE HAVE TO CONGRATULATE AND THANK YOU FOR THE PERFECT OPERATION OF SUTHERLANDS AND EXCELLENT STARTUP BY MR WALTER LAST NIGHT

Yours very truly,
p.p. ENSO-GUTZEIT OSAKEYHTIÖ

One copy airmail
One copy steamer

Right from the start you'll be pleased with Sutherland Continuous Beaters, and your satisfaction will grow as they cut your power costs in half . . . give you faster-draining, higher-test pulps . . . keep your maintenance costs amazingly low.

Yes, there's solid satisfaction in Sutherlands. Let us tell you what they can do in your mill.

Write us.

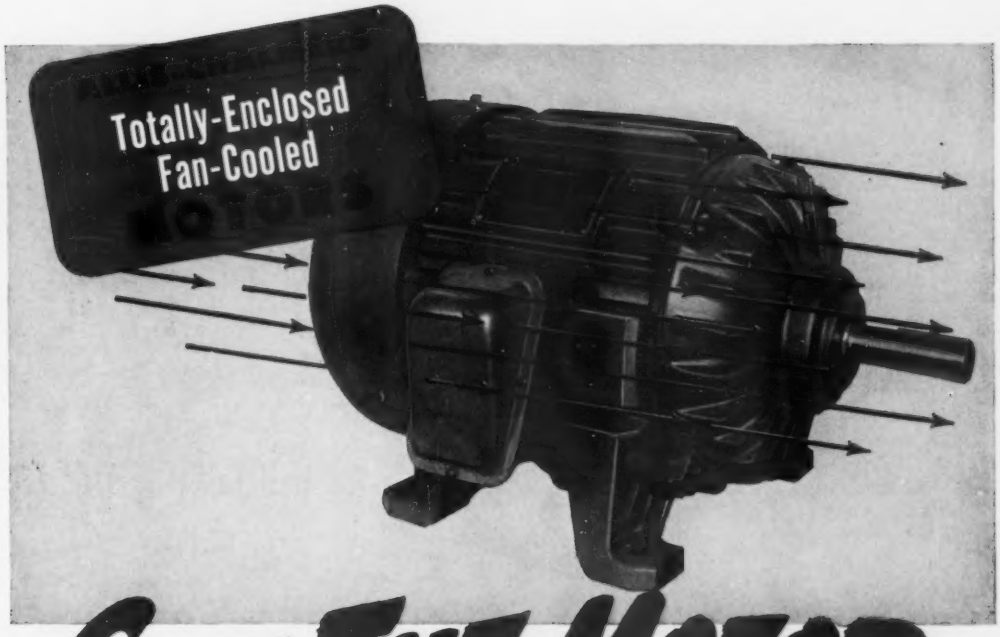
SUTHERLAND

continuous beating systems

Designed, Engineered, Serviced

***by* SUTHERLAND REFINER CORPORATION**

TRENTON 6, N. J.



GET THE MOTOR that Cleans Itself

DROP MOTOR MAINTENANCE COSTS to a new low by reducing motor cleaning operations. And this new Allis-Chalmers Type APZ tefc motor makes maintenance costs lower than ever before on this type of motor.

Here's Why

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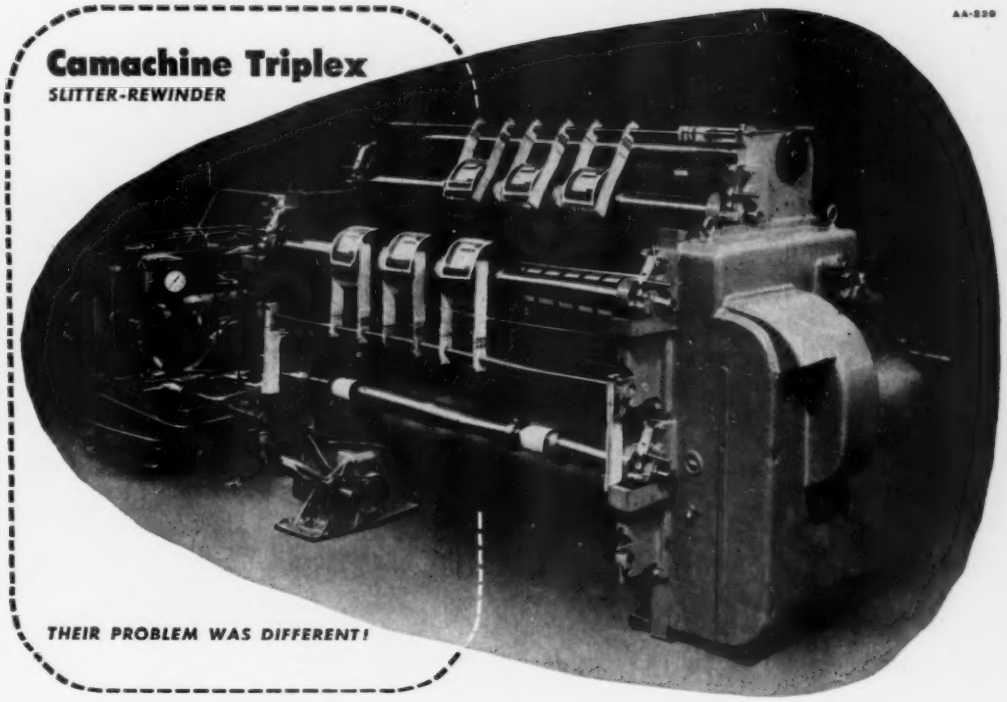
AA-239

Camachine Triplex
SLITTER-REWINDER



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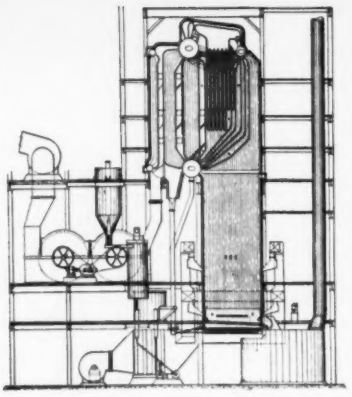
The Union Bag & Paper Corporation's mill at Savannah, Georgia, is the largest integrated pulp-to-container plant in the world.

In connection with its present expansion program, Union Bag has recently ordered another—its fourth—C-E Recovery Unit.

The new unit—like its immediate predecessor, in service since 1949—is of 350-ton capacity. It is designed to burn 1,050,000 pounds of black liquor solids per 24 hours and will produce steam at 425 psi and 725 F. Earlier C-E Recovery Units—of smaller capacity—have been in service at this mill since 1942 and 1944 respectively.

The C-E Recovery Unit's reputation for reliability, efficiency and operating economy is built on a sound basic design enhanced over the years by the addition of carefully developed, service-proved advantages. That its reputation is justified is evidenced by numerous repeat orders not alone from Union Bag & Paper Corporation but from several other prominent pulp and paper companies.

B-479



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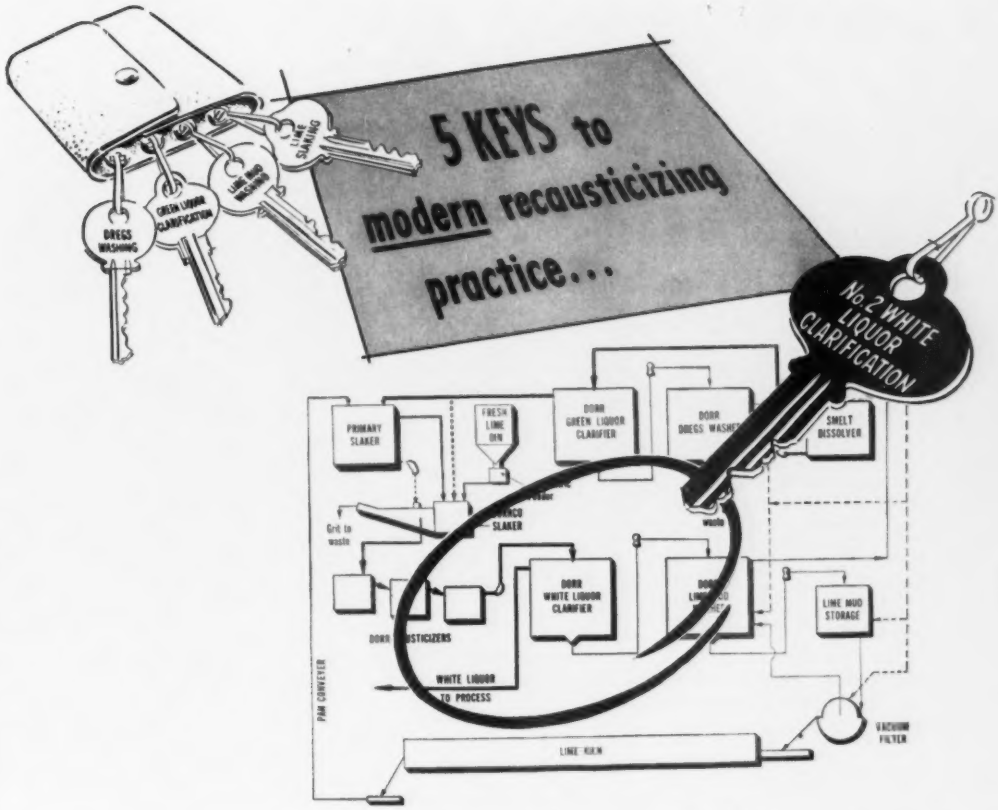

White liquor clarification is the key step that links the entire recausticizing operation with the pulp production cycle. In the Dorr System . . . the standard of the Alkaline Pulping Industry . . . the Dorr White Liquor Clarifier carries out this all-important step.

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White liquor clarification is only one of the important unit operations in The Dorr System. A new bulletin, #3301, describing the recausticizing operation in detail, will be sent on request. Address inquiries to The Dorr Company, Barry Place, Stamford, Conn.; or in Canada, to The Dorr Company, 80 Richmond Street West, Toronto 1.

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Section of Inspection Department in our new modern plant.

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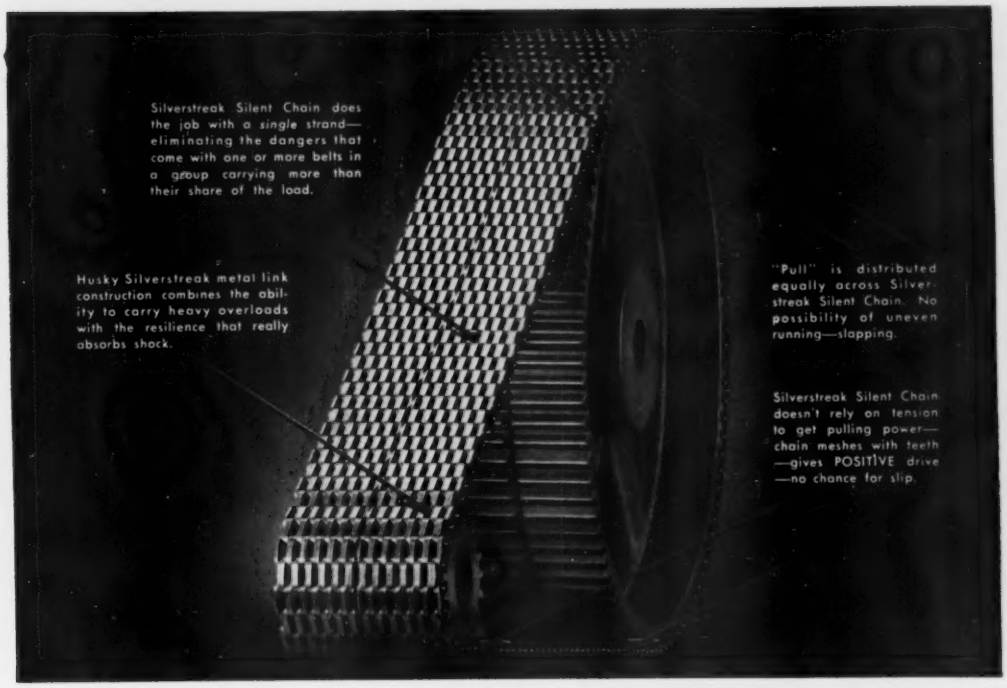
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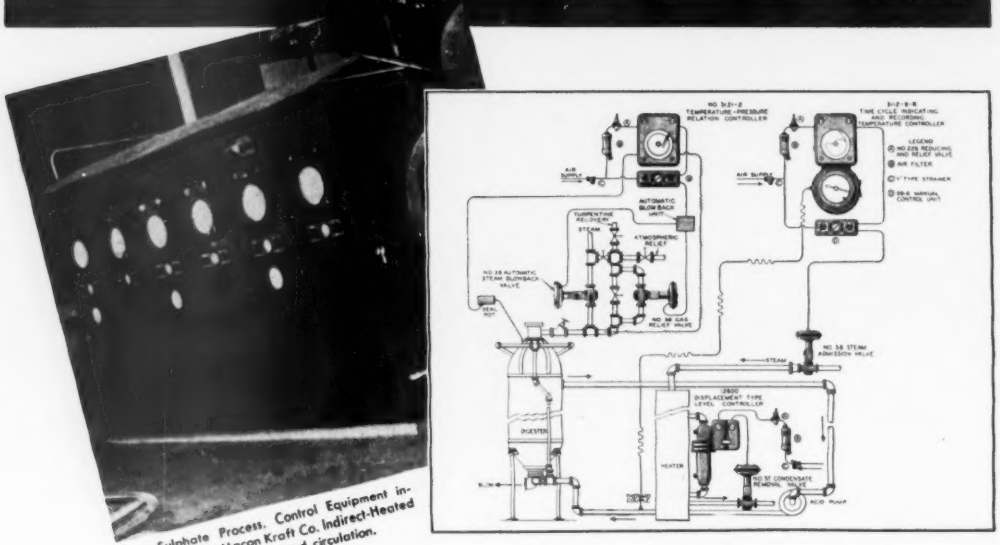
More Uniform Cooks with

MASONEILAN DIGESTER CONTROLS



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. . . a high production machine . . . ideal for disintegrating pulp, broke or waste paper

Other DynoMachines:

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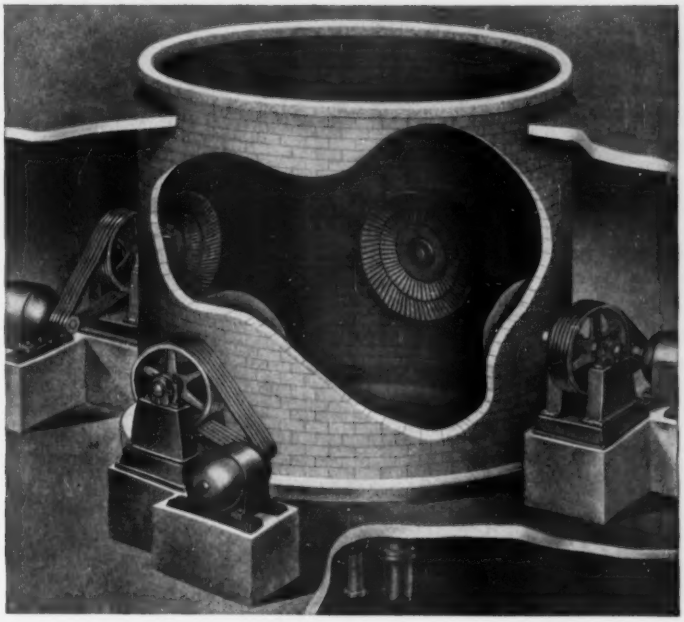

THE stock is charged all at one time into the top of the vat. Four DynoPellers (described below) subject it to the vigorous dynomizing action that completely separates each fibre from its neighbor, maintaining its original length. The simple operating principle and design of the QuatroPulper eliminates the "wracking" and grief of other types of pulpers. Because there are few moving parts there is no loss of production time due to repair or adjustment. The QuatroPulper defibers the stock at low cost and produces a high quality slurry quickly and effectively.

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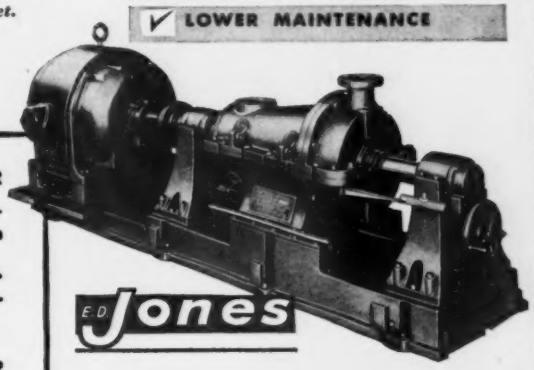

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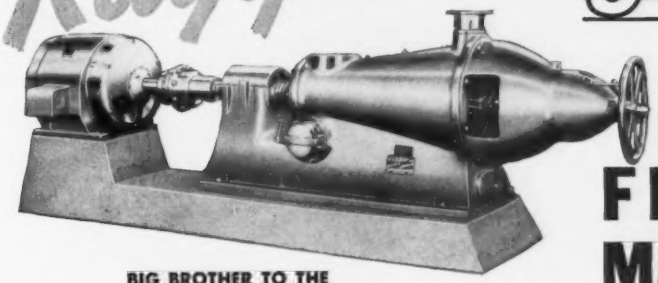

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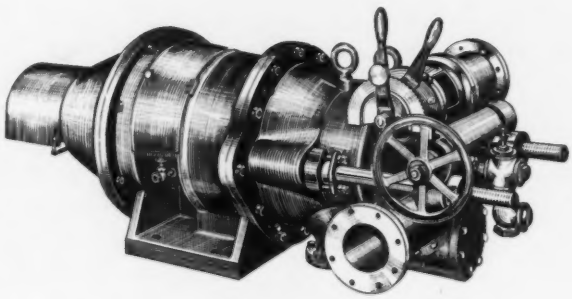

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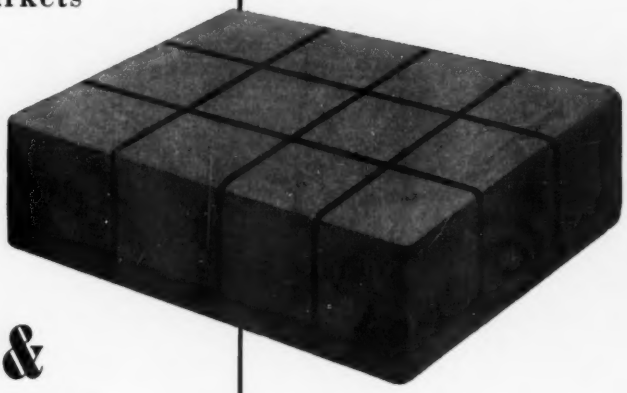

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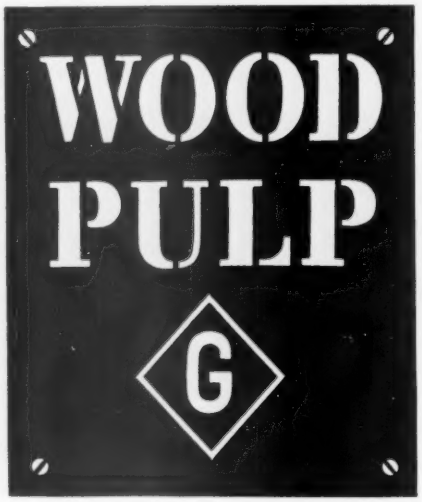

"Hear ye not the hum of mighty workings!"
JOHN KEATS

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During the last half century alone, United States paper consumption has increased more than sevenfold, and continues apace.

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PULP & PAPER
"The Cellulose Age"
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Mobilization and Dissolving Pulp Needs

With the startup of Celanese Corp.'s new pulp mill, featured in this issue of PULP & PAPER, there should be a comfortable boost to the supply of textiles, among other products its pulp will be used for.

Rayon Organon, in a recent issue, stated that despite what it called "extravagant talk" regarding the extent of bona fide military needs for textiles in 1951-52, no shortage of textiles for civilian requirements is contemplated. Rayon textiles are an important user of purified wood pulps as raw material.

The Office of the Quartermaster General said a statement attributed to General William H. Middleswart, chief of the military planning division, that the military would soon be taking 65% to 70% of wool supply was "neither official nor confirmed."

Rayon Organon did some investigating. Says our contemporary:

"The facts show that the average military use of wool in the four war years 1942-45 was 36% of total apparel wool consumption. Cotton consumption averaged 33% of total consumption . . . Rayon's military consumption averaged 130,000,000 pounds a year or 19% of total consumption . . .

"Next consider the differences between 1942-1943 and 1951-1952 . . . There was great haste required in preparing for a full-scale shooting war ten years ago, but the same degree of haste does not exist today . . . the inevitable waste and overordering should be less today. The military personnel in World War II built up to a total of around 12,000,000 men, whereas today's figure is one-quarter or, at the most, one-third of that figure . . . loss of textile items per man in combat today so far is less than it was . . .

Noting some exceptions tending toward brief stockpiling of wool, Rayon Organon reported an indicated bona fide military demand of all textile fibers during 1951 and 1952 only one-quarter or one-third as great as early World War II years. It said of rayon:

"In the rayon picture, the producers have been ordered to set aside 15% of their high tenacity viscose yarn for defense purposes, a figure representing as much as 50,000,000 pounds a year. As regards all other types of rayon, a percentage of the World War II military consumption plus some new uses would suggest an outside figure of 20,000,000 pounds per year (1951 and 1952) which would represent 2 percent of the industry's textile filament yarn plus staple producing capacity."

Di Mag, Take Heart! Celler is Coming

Never a man to be daunted in his crusading against that dreaded Monster Monopoly, Congressman Emmanuel Celler, Democrat of Brooklyn, has now turned his wrath upon organized baseball—to save those poor down-trodden "slaves" who are driven out on the diamonds of our fair land to run and bat and catch till they are ready to drop with exhaustion, with no chance to get ahead in life, except occasionally to draw down pittances of $50,000 or $100,000 a year playing games, raking off a little pin money on the side with sporting goods manufacturers, radio, television, restaurants bearing their names, etc.

Is it possible that Congressman Celler became discouraged when his Newsprint Monopoly hearing last year blew up in his face, another in a long series of expensive hearings which have failed to prove monopoly and price-fixing in the newsprint industry.

An interesting sidelight now is that while Congressman McCormick wants still another hearing to prove newspaper publishers are victims of a "concerted move to *gouge*" them, a congressional committee finds newsprint prices are *too low*—to keep competitors out of the field, it suggests!

Another Poem on Paper

Readers seemed to like a recent poem on paper we ran on this page . . . so here's another we ran across which might be called a short editorial in rhyme:

RAGS make paper.
PAPER makes money,
MONEY makes banks,
BANKS make loans,
LOANS make beggars,
BEGGARS make rags.
—18th Century Rhyme
in the Fraser Voyageur.

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PULP & PAPER circulates all over the world.
It is read in virtually every pulp and paper company office and mill throughout the United States, Canada, Mexico, Alaska, Hawaii, the Philippines, Australia and New Zealand. It is read in many other offices and mills in Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Uruguay, Venezuela, England, Ireland, Scotland, Sweden, Norway, Finland, France, Germany, Austria, Belgium, Holland, Czechoslovakia, Italy, Spain, Switzerland, Soviet Russia, Poland, Jugoslavia, India, Pakistan, Israel, South Africa, China, Japan, Formosa, both near and far around the world, where pulp and paper are made.

PULP & PAPER *is a Member of the Audit Bureau of Circulations, 165 W. Wacker Dr., Chicago (1), a cooperative association of advertisers, advertising agencies and publishers for verification of circulation of newspaper and periodical members in the U. S. and Canada. Subscription prices for 13 issues per year (12 monthly issues and also the valuable and comprehensive reference issue entitled the North American Review Number) are as follows: In the United States, Canada, Mexico and other Pan American Union nations—$3 for one year or $5 for two years. In all other countries—$4 for one year and $7 for two years.*

WASHINGTON SCENE

OPS AND NPA ORGANIZATIONS

MORE INDUSTRY MEN GO TO WASHINGTON (l to r): JOHN H. O'CONNELL, Washington consulting engineer who recently advised Atenquique Mill in Mexico, now Machinery and Equipment section in NPA; SI POSEN, ex-Rayonier staffer, is back as Chief of Pulp Price section, as he was in World War II; C. O. BROWN, from International Paper in South, is Chief of Pulpwood section in OPS; and GABRIEL J. TICOULAT, formerly reported as head of Pulp, Paper and Board, in NPA, has organized his staff. He is a Crown Z vice president.

Out of the confusion in Washington, things began to make sense last month. As the pieces fell into place, it became possible for the first time for members of this industry to find where to go in Washington to get attention to their problems.

Staffing of branches and sections of Office of Price Stabilization and National Production Authority, which had been delayed, and delayed again, in the absence of an "all-out" war effort, was finally being accomplished, although there was still much to be done.

Capable industry men were in charge for the pulp and paper industry in both OPS and NPA. W. J. Damtoft, of Champion Paper Co., was co-director of the OPS Forest Products Division, and responsible for operations of the Pulp, Paper and Board branch, headed by Rufus Worrell. Gabriel J. Ticoulat, Crown Zellerbach vice president, was director of NPA's Pulp, Paper and Board Division, and was assembling a staff of industry men to take charge of 15 different work separations.

OPS Organization

Mr. Damtoft told PULP & PAPER in Washington that while OPS "staffing is progressing satisfactorily, there will probably be a number of additions as the work of the Forest Products Division and the Pulp, Paper and Board Branch increases." As this issue went to press, the organization follows:

FOREST PRODUCTS DIV.—OPS.

W. Stuart Ingram, acting director.
W. J. Damtoft, co-director.

Pulp, Paper and Board Branch
Rufus Worrell, director.
Mike Walsh, assistant.
Quincy Adams, economist.

Pulpwood Section
C. O. Brown, chief.

Wood Pulp Section
Si Posen, chief.

Paperboard Section
N. M. Brisbois, chief.

Waste Paper, Rags and Other Fibers Sec.
J. T. Flannery, chief.

Fine Paper Section
J. B. Ware.

Coarse Paper Section
Ted Neely.

John D. Mylrea, original director of the Forest Products Division of OPS, has been seriously ill, and Mr. Ingram has acted as director in his absence.

Offices of OPS are temporarily in Temporary Bldg. S., 6th and Jefferson, Washington, D.C. Telephone is Sterling 4200.

NPA Organization

Under the new organizational outline of NPA, Pulp, Paper and Paperboard operates as a division under the Chemical, Rubber and Forest Products Bureau. Other divisions under this bureau include: Chemicals; Lumber and Wood Products; Printing and Publishing; Containers and Packaging, and Rubber.

The organization under NPA as this issue went to press was:

PULP, PAPER AND BOARD DIVISION

G. J. Ticoulat, director.
W. L. Neubrech, assistant.

Fine Paper—John Cryan.
Coarse Paper—T. H. Mullen.
Tissue Paper—James Maloney.
M-36—John Franzen.
Container Board—Jack Moore.
Boxboard—Charles Moyer.
Pulpwood—M. H. Collet.
Waste Paper—Wm. Edwards.
Waxed Paper—J. Melton.
Wood Pulp—A. M. Howe.
Staff Activities—W. L. Neubrech, director.

MACHINERY & EQUIPMENT—CONTROLLED MATERIALS PLAN

John Morgan—Certificates of Necessity.
Wm. J. Meaney—CMP.
John H. O'Connell—Machinery & Equipment.

International—Paul S. Fiske.
Programs and Statistics—W. H. Pederson.
Labor—Matthew Burns.
Chemicals—H. Heller.

Offices of these men are located in the Old General Accounting Office Bldg., Washington, D.C. Telephone is Sterling 9200.

Advisory Committees

Symbolic of the closer operation of industry with government was the meetings of the various industry advisory committees. Three of these met in April, and others will meet again in May and June.

Ten members of the Pulp and Paper Machinery Manufacturers Industry Advisory Committee were asked at an NPA meeting in Washington, April 23, for information on papermaking machinery requirements to aid in formulating an industry program under the Controlled Materials Plan which goes into operation July 1. The committee was to present results of its survey on May 22.

At the April 23 meeting the committee pointed out the reluctance of the industry to give up the manufacture of pulp and paper industry equipment unless the needs of the defense program dictated such a move. NPA asked for a report from each company on current scrap inventories and emphasized that the industry could contribute greatly toward conservation of critical materials by standardizing products, reducing plant and sheet sizes and simplifying design.

The industry committee reported an average of 30% of its orders now carry DO-97 ratings and stated present capacity is adequate to meet requirements, provided materials are available.

Appeal for Scrap Metals

Spokesmen in the advisory committee urged pulp and paper mills, through PULP & PAPER, to survey their yards and storage rooms to see that all scrap metal gets back to the foundries.

J. A. Lawson, of NPA's General Industrial Equipment Division, presided. Present were Henry C. Moore, Beloit Iron Works; F. K. Becker, Bird Machine Co.; N. P. Wardwell, Carthage Machine Co.; Enright A. Ellis, Downington Mfg. Co.; Roy Bolton, Emerson Mfg. Co.; John P. Rich, IMPCO; S. Harley Jones, E. D. Jones & Sons Co.; Bryant W. Langston, Samuel M. Langston Co.; A. W. Plier, D. J. Murray Mfg. Co.; and C. S. Barton, Rice Barton Corp. Members not able to attend the meeting were James E. Waterhouse, Montague Machine Co.; and Homer Martindale, Black-Clawson Co.

Manpower problems, and high prices of imported pulp and waste paper came in for attention at the April meeting of the Sulfite Paper Mfgrs. Advisory Committee with NPA. Manufacturers who must rely on Canadian pulp are encountering manpower problems, and a request has been presented to the Canadian government for permission to import several hundred German workers to relieve Canadian shortages.

T. H. Mullen, of NPA's Pulp, Paper and

Board Division, presided at the meeting and committee members present included: G. F. Henderson, Brown Co.; A. G. Handry, Consolidated Water Power & Paper; W. A. Brown, Crown Zellerbach; J. G. Conley, Fraser; A. Southon, KVP; Leo E. Croy, Marathon; N. E. Nash, Nekoosa-Edwards; A. P. Mitchell, Riegel Paper; Irving T. Rau, St. Helens Pulp & Paper; George Stuhr, Southern Kraft; and Donald F. McCall, Racquette River Paper Co.

Kraft Industry Meeting

Four possible pulp control measures were suggested to the organizational meeting of the Kraft Paper Mfgrs. Advisory Committee by NPA in April. These were:

(1) A reserve order, under which integrated mills would be obligated to sell for market a certain percent (perhaps 2%) of pulp production, with privilege of choosing customers.

(2) A mill inventory restriction.

(3) A use limitation order, combined with percentage restriction on purchasers' consumption.

(4) Export quotas, set in relation to past sales, to control pulp exports.

The advisory committee in turn suggested that in place of the proposed pulp reserve on integrated mills that M-36 be amended to increase the required reserve but permit mills the option of either accepting government orders for paper or selling pulp against this reserve.

NPA advised the committee that sulfur shortages would continue and said conservation measures which are decreasing the kraft paper industry's consumption of sulfur at the rate of 10% should be accelerated.

T. H. Mullen presided at this meeting, and industry members present included: G. F. Henderson, Brown Co.; T. R. Moore, Brown Paper Mill Co.; W. C. Shorter, Camp Mfg.; W. A. Brown, Crown Z; H. C. Lawless, Gilman Paper; J. W. Warner, Gulf States Paper; J. B. Cowie, H & W Co.; V. R. Hann, Merrimac Paper; W. J. Dixon, St. Regis; George Stuhr, Southern Kraft Div.; I.P., and H. S. Daniels, Union Bag.

Shortly after this committee meeting NPA issued a paper amendment to M-36 which separated newsprint and groundwood grades, and increased the set-aside for groundwood to 10% and left newsprint at 5%. The set-aside for machine coated papers was increased from 5 to 10%.

Canada Prepares For World Allocations

In advance of any action for international allocation that may emerge from Washington conferences, Canada has declared newsprint and woodpulp essential materials under authority of the Defense Production Act. R. M. Fowler, president of the Canadian Pulp and Paper Association and the Newsprint Association of Canada, Montreal, has been appointed director of a new pulp and paper division of the materials branch of the defense production department, headed by Hon. C. D. Howe, F. L. Mitchell, general manager, CPPA, and J. M. Smith, also of that organization, are to act as Mr. Fowler's assistants.

Mr. Fowler will also represent Canada on the international pulp and paper committee, which is expected to start a study of world pulp and paper supply immediately.

At the meeting of the CPPA last January Mr. Fowler made a strong plea against establishment of controls over the pulp and paper industry, and even though the controls have not yet been actually established the Canadian government has established the framework for more effective regulation on a centralized basis through the appointments and the declaration of newsprint and woodpulp as essential materials.

The move is interpreted at Ottawa as partly due to the pressure of France, the United Kingdom, India and some other countries for more newsprint. Without some redistribution of supplies there is little that Canada's industry can do as production is close to the peak and shortages in necessary materials for pulp and paper manufacture are developing.

In Canada it is expected the proposed international conferences will be devoted in part to guaranteeing to the Canadian industry an adequate supply of such materials as sulfur and woolen felt from the U.S., aiming to keep up newsprint production. Canada is in a better bargaining position on this account since newsprint and woodpulp have been declared essential, and Mr. Howe is Canada's No. 1 man in overall war production planning.

ALASKA MILL PROJECT
Plans are Drawn Up for DPA

As we went to press, an application had been received by the Defense Production Authority for a certificate of necessity on the Ketchikan Pulp & Paper Co.'s project for a high alpha dissolving pulp mill with bleach plant and chemical and heat recovery at Ward's Cove, adjacent to the city of Ketchikan, Alaska.

The project as submitted to the DPA calls for investment of $40,000,000 on which the customary tax writeoff would be allowed for encouragement of defense projects. So far, the percent of tax amortization for pulp projects within continental United States has been 65%, in most cases for the full amounts, or virtually the full amounts applied for.

Puget Sound Pulp & Timber Co., Bellingham, Wash., and American Viscose Corp., anticipated principal converter of the Alaska pulp, jointly created the Ketchikan Pulp & Paper Co., also of Bellingham, and are the principals of the project.

Lawson P. Turcotte, president of Puget Pulp, is also president of Ketchikan Pulp & Paper. He resides in Bellingham. Robert Evans, Seattle attorney, is vice president of the Ketchikan company.

The $40,000,000 project was drawn up for submission to DPA by Harold D. Cavin, consulting engineer for Ketchikan Pulp & Paper and Puget Pulp, who has designed and directed engineering for pulp mill units and bleach plants in Bellingham, Everette, and Tacoma, Wash., and Mobile, Ala., as well as for some foreign enterprises.

A DPA certificate does not give the applicant any priorities for materials or supplies. Even when priorities are obtained, it is unlikely that there could be much construction accomplished on the Alaska mill until 1952.

A "pulptimber unit" in the Ketchikan region has already been purchased from the U. S. Forest Service by the Ketchikan company, as assured by a $100,000 down payment. The company has already invested over $500,000 in timber, site, engineering, etc.

Under contract with the Forest Service, the first unit is to be 300 tons per day, and eventually to build up to 500 tons daily bleached pulp production, backed up by perpetual sustained yield production of the Alaska timber. The company must make a satisfactory showing to the Forest Service of plans to go forward by next Aug. 2 for renewal of the contract, and this is expected to be done.

ERNST MAHLER, KIMBERLY-CLARK CORP. EXECUTIVE VICE PRESIDENT WHO IS ALSO A VICE PRESIDENT OF Valley Iron Works Co., Appleton, Wis., was made an honorary member of the Iron Works Quarter-Century club at a dinner at the Conway hotel. He has been on the firm's Board of Directors since 1920. Left to right in the picture are R. A. Peterson, President of Valley; Mr. Mahler, who also was the speaker; James Hannagan, the oldest employe, 51 years of service; and William K. Kolb, Vice President and Works Manager.

On To the ROSE CITY!

PORTLAND WILL SMASH SUPTS. RECORD

Perhaps the most amazing fact about the Superintendents National Convention to be held in Portland, Ore., June 24-28, is that it looks very much like it will smash all attendance records for industry meetings of any size, shape or color ever held before—excepting, of course, only the big annual winter conclaves in New York City.

This marks the first time the National Superintendents will go west in their 32 years' history. If there were still any lingering doubts as to whether their national meeting could draw as well on the Pacific Coast as it has in the big metropolitan centers of the east, a preview peak at the figures will erase them.

Last year in Chicago, the Superintendents' registration was 680. Seven weeks before the Rose City convention was to be called to order by President Charles E. Ackley, there were already over 600 signed on the dotted line! Without a quiver of an eyelash, the hard-working registration and housing chairman, R. Burke Morden, was ready to lay even money that *a record smashing mark of 950 would be reached!* He and his assistants were searching every crook and cranny on the Willamette River shores for more hotels and auto courts to house the awaited multitude. The registration will be far and above the Superintendents' 680 in Chicago in '50 and of a little over 600 in Chicago in '47 and again at Atlantic City in '49.

TAPPI, in its national meeting in Portland two years ago set a record of 725 registrations. But the Superintendents will surely top this. Strange as it may seem to other regions of the continent, but not so strange in the west (where superintendents and TAPPI often join forces, and memberships overlap), the convention committee which is responsible for the success of this month's show looks a lot like the one that did the same job two years ago for TAPPI. Six of the 12 westerners who are the working chairmen of this Portland convention's sub-committees were also sub-committee chairmen for the TAPPI convention. Again they have done a fabulous job.

The Committee

The committee members under General Convention Chairman Gus Ostenson who are repeating as "workhorses" who handled mills visits two years ago: John Fulton, ladies' program; LeRoy M. Shanaman, golf; Bob True, finances; Zina Wise, travel and publicity, and H. A. "Gob" Des Marais, reception, all Portland residents except the "Gob" from San Francisco. Mr. Morden, on registration; Merrill Norwood, mill visits; Bob Petrie, transportation; Walt Salmonson, entertainment; Clarence Richen, woods trip, headed other committees and all live in, or near, Portland. Advisory on the committee are Mr. Ackley; Coast Chairman Les Hartman, of Everett, Wash.; past Coast Chairman L. D. McGothlin, Camas; and Gerald Alcorn, Longview; and Fred Armbruster, perennial secretary-treasurer of the Coast Division. Herb Beck, Bob Baer and others of Portland have assisted. Also assisting has been Harry Weston, of Chicago, permanent secretary of the association.

Special Train

Gathering from east, north and south, a body of delegates will board a special Great Northern train under the leadership of "Gob" Des Marais at Chicago; leaving there 9 p.m. Thursday, June 21. More will board at St. Paul next morning. All day Saturday they will spend touring Glacier National Park by motor coach.

GLEN SUTTON (left), serene Superintendent of Sutherland Paper Co.'s Standard Mill Division in Kalamazoo, Mich., is slated to become the new President of the American Pulp & Paper Mill Superintendents at their big Portland, Ore., convention.
CHARLES E. ACKLEY, (right), Paper Mill Supt., Crown Z, West Linn, Ore., and very much the same type of solid citizen as Mr. Sutton, is concluding his term as National President, culminating in presiding over the first national meeting ever held by his organization in the Far West. He, too, came originally from Michigan, where he was born. But his first industry job was at Camas; then he worked for Consolidated at Stevens Point, Wis., KVP at Parchment, Mich., before returning West.

They leave the train again Sunday morning at White Salmon, Wash., and finish the journey down the Columbia by buses, with lunch at Multnomah Falls, arriving at Portland at 2:30 p.m. All baggage is checked right through to hotels; delegates having nothing to do when they arrive but pick up their room keys. The convention will center at the Multnomah hotel.

Woods Trip—Monday

A 250-mile woods trip by buses on Monday, June 25, with foresters for guides will cover about 250 miles of travel, viewing the spectacular length and breadth of one of Crown Z's big Tree Farms in west Oregon. Visitors will see tree-topping, tree falling and bucking, etc. Monday night there will be a get-together party.

Golf and Mill Visits—Tuesday

The Superintendents' Golf tournament will be at Alderwood Country Club, one of the outstanding courses in the Pacific Northwest, with minimum fees and many prizes donated.

On this day, also, are the mill visits, described on *pages 66 and 68.*

Wake-'Em Up Breakfast

The traditional "Wake-'Em Up Breakfast" of all West Coast meetings—rousting the delegates out of beds for an 8 a.m. secretly-planned, and expertly-rehearsed fun-loving show, will be staged by the International Brotherhood of Migratory Peddlers, on Wednesday, June 27. Fundamentally, the purpose is to get all delegates up for the opening convention session.

The Technical Program

As completed up to the time of going to press, an outstanding technical program is set. Talks on new sulfite waste liquor use or recovery processing, as developed in the West; a new hot stock kraft refining system of Shartle Bros.; kraft recovery cost analyses, new hydraulic barkers, new chip handling systems, pulpwood bundling, refining stock for board, and some general papers are fixed for the program.

An outstanding address will be by President Lawson P. Turcotte of Puget Sound Pulp & Timber Co. and Ketchikan Pulp & Paper Co. (the company which will undoubtedly build Alaska's first pulp mill). He will review the world pulp and wood situation. In New York in February, he made one of the most important speeches of Paper Week—he gave the facts about world supply and demand trends, revealed an optimistic long term outlook for North America but a gloomy one for the rest of the world (see page 48 our April 1951 issue).

On both Wesdnesday and Thursday nights there will be dancing, with a final banquet Thursday. A trip to Mt. Hood was tentatively planned for ladies on Wednesday. A full schedule of events are to be programmed for them.

PROGRAM

WEDNESDAY

9:30 a.m.—Business Meeting.
10:30 a.m.—General Conference. President Ackley presiding.

"The Pulpwood Situation in the Pacific Northwest," Stuart Moir, Forest Counsel for Western Forestry and Conservation Association, Portland, Ore.

"Pulp and Paper Industry of the U.S. in Today's Economy," Dr. Louis Stevenson, economist and statistician for the American Paper and Pulp Association, New York.

"The Wood Pulp Emergency," covering the international wood and woodpulp situation, Lawson P. Turcotte, president, Puget Sound Timber Co., Bellingham, Wash.

2:30 p.m.—*Paper Making Round Table*—Gus Ostenson, Manager Production, Crown Z., Camas, presiding.

"How We Keep Our Machines in Tip-Top Shape," R. P. Wollenburg, Chief of Engineering Division, Longview Fibre Co., Longview, Wash.

"Problems Relative to High Speed Kraft Machines," John A. McDermott, Paper Mill Superintendent, St. Regis Paper Co., Tacoma.

One or two more papers on costs of down time, high speed newsprint, or other.

2:30 p.m.—*Sulfite Round Table*—Jesse R. Lewis, Manager of Operations, Coos Bay Pulp Corp., Anacortes, Wash., presiding.

"Ammonia Base Sulfite Production as it Relates to Quality of Pulp," R. Douglas Waddell, Technical Supervisor, Crown Z., Lebanon, Ore.

"Ethyl Alcohol—Is it a Solution to the Sulfite Waste Liquor Problem?"—(both from market and BOD removal angles)—Erik Ekholm, Vice President, Puget Sound Pulp & Timber Co., Bellingham, Wash.

"Sulfite Pulps for a Specialty Mill," J. V. Savage, Sulfite Mill Superintendent and Bleach Plant Superintendent, Crown Z., Camas, Wash., where new planned pulp-mixing techniques are developed.

"Metal Allocation," Lee E. Hill, Jr., Plant Engineer, Weyerhaeuser Timber Co., (who served on industry's National Metals Committee). (Possibly, also, a paper on MgO).

2:30 p.m.—*Kraft Round Table*, Gerald Alcorn, construction engineer, Weyerhaeuser, Longview, presiding.

"How to Maintain a Chemical Recovery Unit," Russell Graft, Assistant Pulp Superintendent, Longview Fibre Co.

"Caustic Room Operation," (economic angles), A. C. McCorry, Pulp Superintendent, St. Regis, Tacoma.

"Lime Recovery Equipment," W. H. Tock, Engineer, Basic Industries Dept., Allis-Chalmers Mfg. Co., Milwaukee.

"Preliminary Refining of Hot Stock Kraft" (before it is washed), Gordon Petrie, or some other representative of Shartle Bros.

THURSDAY

9:30 a.m.—Paperboard Group, Glen T. Renegar, General Superintendent, Container Corp., Philadelphia, presiding.

"Design of Cylinder Machine Vats," Philip H. Goldsmith, Pusey & Jones Corp., Wilmington, Del.

"Stock Preparation in Board Mill" (a general discussion), Lee Eberhardt, Bauer Bros., Springfield, O.

"Insulation Board Manufacturing," Chas. L. Walton, Manager, Simpson Logging Co., Woodfibre Division, Shelton, Wash.

"What Improvements Have Been Made in Mill to Keep in Competitive Position," Walter R. Wolfe, Superintendent, Mac Sim Bar Paper Co., Otsego, Mich.

9:30 a.m.—*Woods and Wood Preparation.*

"Newer Trends in Pulpwood Handling" (bundling of wood, etc.), Clarence Steigle, Manager, or some other representative of Hyster Co., Seattle, or Portland.

"Recent Advances in Hydraulic Barker Design" (dealing with Hansel and other recent ring type hydraulic barkers), Meder Johnson, Manager, James Brinkley Co., and former chief engineer of Rayonier Inc.

"Chip Servicing and Chip Handling," Wm. Farley, Wood Mill Foreman, Crown Z., Camas.

"Screening Book Groundwood from Western Softwoods," Arthur Palmer, Groundwood Superintendent, Crown Z., West Linn, Ore.

9:30 a.m.—*Finishing Session.*

"Practical Operation of Rotary and Sheet Cutters"—Geo. A. Holt, Gen. Supt., Rayonier Inc., Hoquiam, Wash.

"How We Operate Our Supercalenders"—Robert W. Riley, Supt. of Coating, Crown Z. West Linn, Ore.

"Expediting the Packaging and Shipping of Paper"—J. W. Weiblen (who is son-in-law of President Ackley of the Supts.), Supt. Finishing, Columbia River Paper Mills, Vancouver, Wash.

2:30 p.m.—*General Conference.* L. R. Hartman, Chairman, Pacific Coast Div., presiding.

Here are members of the 1951 Industrial Affiliates Committee of the Superintendents Association, all of whom are expected to be on hand at the National Convention in Portland, Ore. All are top flight pulp and paper specialists for their respective companies. Top row (left to right): ALLAN HYER, Chairman of Committee, from Bagley & Sewall; W. K. METCALFE, First Vice Chairman, J. O. Ross Engineering Corp. WALTER MOREHOUSE, Second Vice Chairman, Napco Chemical Co.; A. M. COOPER, Westinghouse Electric Corp.; and C. D. DEMERS, Taylor Instrument Co. Lower row—more Affiliates Committee Members (left to right): J. H. LOOMIS, American Cyanamid Co.; L. M. WOODSIDE, Albany Felt Co.; R. T. KIDDE, Hills-McCanna Co.; HOWARD RODERICK, Wyandotte Chemicals Corp.; F. A. SODERBERG, ex-Officio (last year's Chairman), General Dyestuff Corp.

"Is the Superintendent a Salesman?"—William Beckett, Exec. Vice-Pres., Beckett Paper Co., Hamilton, O.

"How and Why of Protective Coatings"—Raymond P. Hill, Pres., Chemical-Proof Construction Inc., Seattle, Wash.

"Non-corrosive Metals"—James T. Gow, Chief Metallurist, Electric Steel Foundry, Portland, Ore.

"Wage Rating of Supervisory Employe"—Robert Boaz, Personnel Service, Seattle.

DUCIE CHADS has been appointed one of two assistant pulp mill superintendents at Puget Sound Pulp & Timber Co., Bellingham, Wash., promoted from chemical engineer. He succeeded *SYDNEY COLLIER*, who is superintendent at the new MacMillan mill in Nanaimo, B.C.

Wennberg Is Supt.
At New Weyerhaeuser Mill

E. N. Wennberg, for the past eight years with Columbia River Paper Mills, Vancouver, Wash., has resigned as its mill superintendent to become superintendent of paperboard products at the new kraft mill of Weyerhaeuser Timber Co. now under construction at Longview. He will affiliate with his new organization in mid June. Mr. Wennberg, a native of Norway, graduated from pulp and paper school of Syracuse University in 1929, later working for a Brown Co. and other east mills.

NORTHERN PAPER MILLS ADDS TISSUE MACHINE

One of four new tissue machines recently planned or installed in Green Bay, Wis., and its vicinity, Northern Paper Mills has started up its new 172 inch wire Beloit creped toilet tissue machine with a 12 ft. diameter, 125 psi pressure, Yankee dryer. Believed largest machine of its type in the world, its wire trims 162 in. and planned speed is 1650 fpm. This is 7th machine for Northern, but will be known as No. 5. A Beloit 130 ½ in. machine was started up by Northern in Feb. 1949. The two add about 90 tons to Northern's total tissue of 250 tons per day. Fast growing poppel (aspen), making a softer pulp and tissue, is mixed with spruce and fir. Has latest General Electric amplydyne d.c. drive. Jones Pulpmaster is another recent addition and stock blending and proportioning system designed by Northern's own engineers. . . . . .

ANOTHER I.P. MILL PLANNED

Plans for a new mill to produce Chemfibre were announced by International Paper Co. following the granting of a certificate of necessity by the DPA. An investment of $15,600,000 has been mentioned. Company sources indicated the mill may be in Mobile and that its start may be delayed for several months. Outside informed sources talked of an additional production unit at Moss Point, Miss., and also that engineering personnel had been drained by enrollment in reserves and national guard. The company produces Chemfibre (container material from hardwoods) at Bastrop, La., and Georgetown, S.C.

PLANS FOR NEW ALABAMA MILL

Financing of the proposed paper mill to be located near Butler, Ala., on a site on the Tombigbee river will be undertaken by a syndicate developed by Ben Wooten and the First National Bank of Dallas, Texas, according to Paul D. Hammacher, president, Choctaw Pulp & Paper Co. The proposed site is on a major Southern river, and located in a heavily forested, fast growing area, on the Meridian & Tombigbee railroad, which connects with Southern Railway and Louisville & Nashville. Conditions under which aid from the Reconstruction Finance Corp. would be forthcoming were said to have been laid down a number of months ago. It is understood new interests are involved. . . .

A PRE-VIEW OF SUPTS. WOODS TRIP

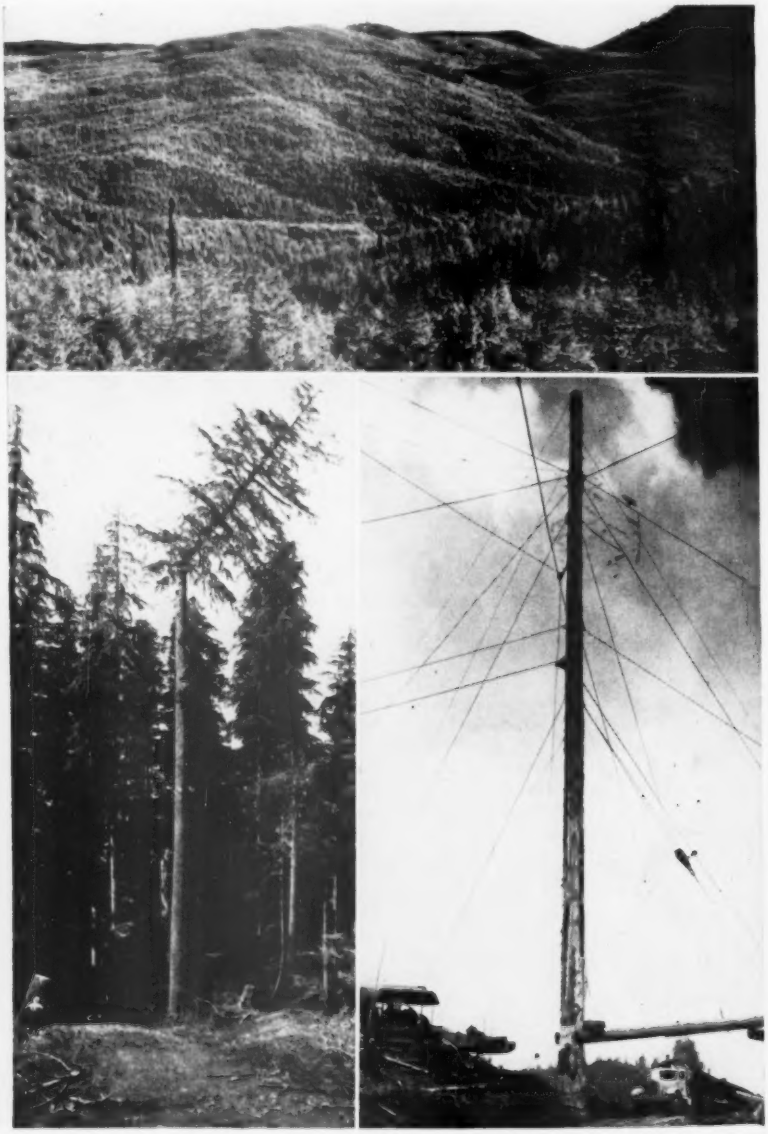
(Prepared Especially for PULP & PAPER)

By Clarence Richen

Chief Forester, Crown Zellerbach Corp., and
Chairman of the Supts. Convention Subcommittee in Charge of Woods Trip

The Clatsop Tree Farm, which will be toured by delegates to the Superintendents National Convention, is a forest of 130,000 acres in the northwest corner of Oregon in Clatsop County, bounded by the Columbia River on the North and the Pacific Ocean on the West (author is pointing to map in picture, page 38). At its northern edge is Astoria, founded by John Jacob Astor in 1811. Along its western edge is the town of Seaside which marks the terminus of the Lewis and Clark Expedition of 1804-1805 which Thomas Jefferson organizes for the purpose of exploring the Louisiana Purchase, from the Mississippi to the Pacific Coast.

The first purchase of forest land on the Clatsop Tree Farm was in 1893 and subsequently over a period of more than 50 years the Tree Farm has been enlarged to its present size which covers an area of more than 200 square miles. The farm is composed of a well-balanced forest structure of virgin old-growth timber, selectively-logged stands, young second-growth stands, and reforested cut-over lands. Western hemlock is the predominant species although Sitka spruce, Douglas fir, Western red cedar, balsam fir, and red alder also are present in commercial quantities.



Logging has been underway on the farm more than 100 years beginning with hand logging and bull teams. Now loggers fall trees with power chain saws with draw bars of two to seven feet in length. Tractors, high lead and skyline cable systems yard or pull the logs to the truck load. Loading donkeys with swinging booms, or shovels with air tongs, load the logs on high-staked trucks powered by diesel engines of over 200 hp. rating. Trucks haul the logs to the booming grounds on rivers or bays where the load is wrapped with steel bands, picked off the truck, lowered in the water and floated as an "asparagus" bundle. Several truckload bundles of pulp logs are made up into rafts and towed up the Columbia to Camas or West Linn mills. If logs are suitable for plywood or lumber they are sorted, rafted and sold to plywood companies and sawmills.

The logging problem is complicated by rainy climate, steep topography, large size of the timber, and extremes in log sizes, varying from 4 in. to 9 ft. diameter. Foresters and engineers map and cruise the areas well in advance of logging, plan the road system and logging layout, and build roads before operations begin.

The timber stand most urgently in need of cutting because of poor growth, insects or disease-infected, or damaged by wind and exposure is selected for cutting first. Vigorous, healthy stands are allowed to grow in volume and in value. The Clatsop Tree Farm is operated on a perpetual sustained yield basis; annual cut is never in excess of annual growth.

Reforestation of land by planting of nursery-grown trees and helicopter seeding is done where nature fails to reforest the logged areas promptly and adequately. Planting of seedlings began in 1925; now there are about 8000 acres of plantations on the farm. There are no idle lands void of trees except very recent cutover lands.

First aerial seeding in the region was

PRE-VIEWS OF TREE-TOPPING—Other sensational and interesting big-woods scenes which Portland, Ore., Supt.. Convention delegates will see on all-day bus trip through scenic Clatsop Tree Farm of Crown Zellerbach Corp., located northwest of Portland towards Pacific Coast, Monday, June 25. AT TOP LEFT is a sweeping panoramic view of forest showing thriving young trees—hemlock and spruce with sprinkling of Douglas fir and Western red cedar—that have grown since old-growth trees were harvested. BELOW, LEFT, a giant tree is just being topped—a thrilling scene which will be repeated for delegates. Daring high-climber is clinging and swinging with the tree just below the cut he made, but is obscured. Note how small in comparison is man at lower left, who is watching, while standing beside a stump several times bigger than he is. AT LOWER RIGHT, a giant spar tree—with its multiplicity of high leads and cables. This tree was similarly topped and cleaned of branches before put to use.

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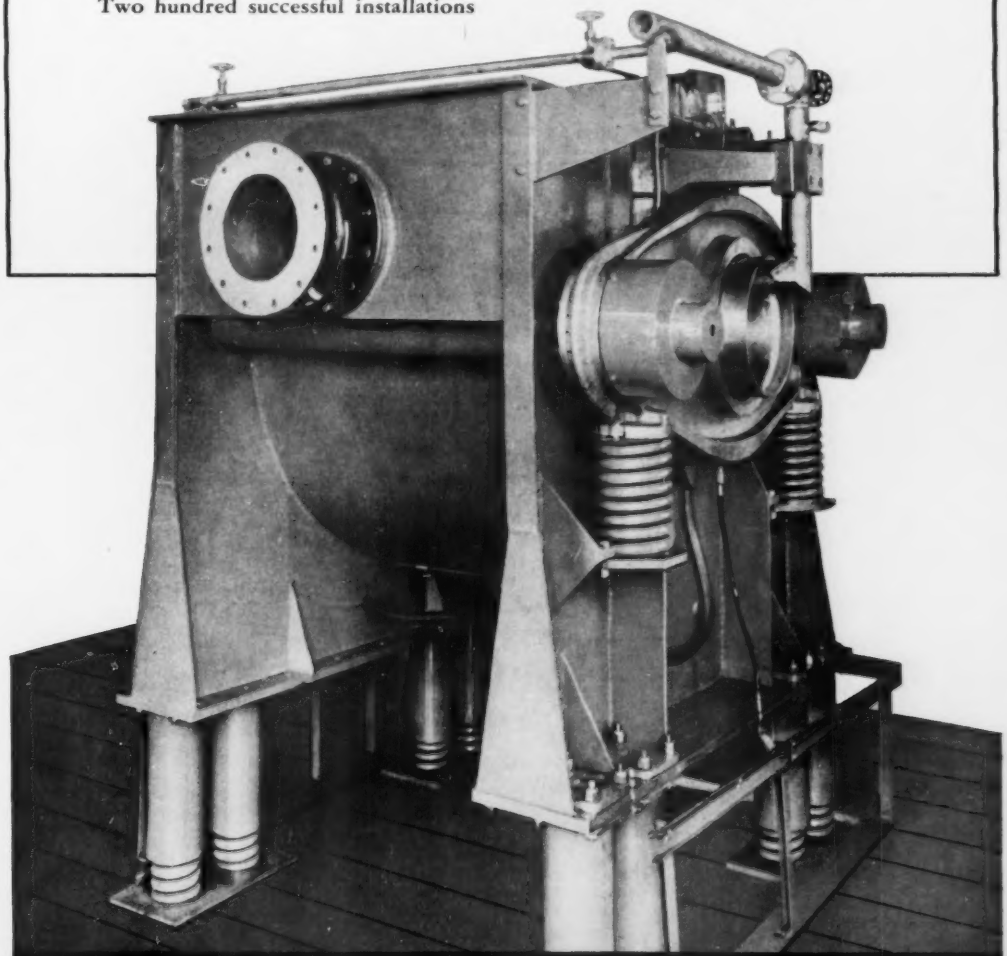
The BIRD VIBROTOR SCREEN employs high frequency, circular vibration to deliver 50 to 80 tons of well screened stock per day. Consistency is 1.3 to 1.5%. Power is ⅓ HP per ton, or less.

Two hundred successful installations here and abroad testify to the effectiveness of the Vibrotor Screen. Are you fully acquainted with its possibilities for screening *your* stock? If not, better get in touch with Screening Headquarters —



BIRD MACHINE COMPANY

SOUTH WALPOLE • MASSACHUSETTS

E. P. STAMM (left), Logging Manager, Crown Zellerbach Corp., Portland, Ore., who arranged for the exciting and colorful Big Timber woods trip for delegates to the Portland Convention. CLARENCE RICHEN (right), Chief Forester for Crown Z, points on map to Tree Farm near Pacific Coast which delegates will see in operation.

done on the Tree Farm in 1947. Helicopter seeding has become a part of the reforestation program. About 5000 acres has been seeded by helicopter with a mixture of about 100,000 seeds per acre of Western hemlock, Sitka spruce, Douglas fir, balsam fir and Port Orford cedar.

Each year foresters collect cones from selected trees of good health, vigor and form, extract the seed from the cones, and store it at a "seed bank" where the seed is kept at zero degrees temperature until needed for helicopter seeding or sowing of nurseries. About one ton of seed is collected each year.

The Clatsop Farm maintains a modern fire department and trained fire fighters. Fire schools are held at headquarters at Seaside. Forest fire departments do other things than fight fires. They plan and work to prevent fires.

Delegates will visit a famous historical fire scene over the hill from Astoria and Seaside behind Saddle Mountain. The Tillamook Burn of 1933 will be toured. It killed a large area of timber on the southeast edge of the Clatsop Tree Farm. Because the dead trees were a fire menace, 8000 acres of snags were purchased and snag falling was begun.

Delegates will be shown how more than 40,000 snags on 5000 acres have been felled and a snag free corridor one to two miles wide and seven miles long has been built. This de-snagged area is a fire control corridor, important to more than the company—it is also protection for timberlands which form the watersheds of the communities on the north and west side of Saddle Mountain and for the elk and deer and wildlife which roam the timber.

ERICSSON HEADS COAST TAPPI

Pacific TAPPI, at Longview, Wash., in April elected 1951-52 officers and held its annual Shibley Award contest. Eric Ericsson, technical director, Puget Sound Pulp & Timber Co., was elected chairman; Svarre E. Hazelquist, technical director, Weyerhaeuser Timber Co., Pulp Division, vice chairman; and Robert M. True, General Dyestuff Corp., re-elected secretary-treasurer.

Four papers, written and presented by young technicians of the Pacific Northwest mills, competed in the 1951 Shibley Award. Two first-place winners were chosen, each receiving the full $50 Shibley Award: W. F. Cyrus, Crown Zellerbach Corp., West Linn, Ore., and Carter A. Watson, Puget Sound Pulp & Timber Co., Bellingham, Wash. The respective papers were entitled "Photographic Standards for Dirt Control" and "Sources of Wood Dirt in Unbleached Pulp."

Other entries: "Seam Adhesives for Multiwall Bags" by K. M. Shold, Crown Zellerbach Corp., Port Townsend; and "Special Problems in the Operation of an MgO Base Sulfite Acid Plant" by John L. McClintock, Jr., Pulp Division, Weyerhaeuser Timber Co., Longview.

Dr. Walter F. Holzer, assistant director of research, Crown Zellerbach Corp. and chairman of the Shibley committee, was moderator. The award, named in memory of Kenneth "Cap" Shibley, is an annual competition sponsored by the Pacific Section. Prior to his death in 1937, Mr. Shibley was a prominent Pacific Coast chemical engineer.

Executive committee members for the coming year are: Fred J. Weleber, Publishers' Paper Co.; B. T. Briggs, Rayonier, Inc.; A. B. Petersen, Hercules Powder Co.; Robert E. Theime, Soundview Pulp Co.; Dr. Walter F. Holzer, Crown Zellerbach Corp.; Dr. J. M. McEwen, Weyerhaeuser Timber Co., Pulp Division; and the newly elected officers.

CARTER A. WATSON (left), Puget Sound Pulp & Timber Co., Bellingham, and W. F. CYRUS (right), Crown Zellerbach Corp., West Linn, were declared both winners of the annual Shibley Award contest for young mill men on the Pacific Coast, sponsored by the Coast TAPPI, each winning a $50 prize. The contest was held at Longview, Wash., in April.

Germans at Mills In South and West

A group of four German specialists, touring the U. S. as ECA sponsored-guests, have been visiting a number of mills, particularly of interest to them being the new dissolving pulp mill of International's at Natchez, Miss., and several sulfite mills of the Pacific Northwest. The group is comprised of:

Dr. Hans Sachsse, director of Waldhof Pulp Mills; Dr. Erick Knopf, director and chief engineer of Aschaffenburger Pulp Mills; Dr. Theodor Hopner, Director of Research of Aschaffenburger Pulp Mills; and Ludwig Hanselmann, president of Wesfalische Pulp Mills.

Japanese Group Tours Paper Mills

A Japanese commission touring U. S. mills under auspices the Supreme Commander, Allied Powers, Tokyo, are Etsuro Okita, chief of labor relations, Kurashki Rayon Co.; Gunji Miyoshi, chief of labor relations, Teikoju Rayon Co.; Reiji Kato, chief of personnel affairs, Toyo Seikan Co.; Nobutaka Shikanai, secretary, Japan Federation of Employers Associations, Masayoshi Taska, director of Isuzu Motor Co.; Shinichiro Tanaka, chief of labor relations, Jujo Paper Manufacturing Co.; Hayato Sakai, Japanese Civil Affairs, and John Caminer, civilian liaison representative, U.S. Department of Labor. Mr. Tanaka's company operates seven paper mills throughout Japan.

BUREN RICHARD MIZELL, cook and relief shift superintendent, Weyerhaeuser sulfite pulp mill, Everett, Wash., died suddenly after a short illness, at an Everett hospital on March 29. "My" came to the Everett mill as a sulfite cook in 1936 from the Longview Pulp Division, where he had worked since that mill started in 1931. He was a cook for all of his 15 years in Everett, except for three in the U. S. Navy during World War II. During the past several years he has acted as relief shift superintendent. He is survived by his widow, Mrs. Ruth G. Mizell, and by his mother, brother and sisters in and near Louisiana. The body was taken to Louisiana for interment.

J. HERBERT STONE of Atlanta, regional forester for the U. S. Forest Service in the Southern Region, comprising 11 Southern states, has been appointed regional forester of the Pacific Northwest Region with headquarters in Portland, Ore., filling the vacancy created by the death of Horace J. Andrews, who was killed in an automobile accident in Washington, D.C., March 25.

IMAGINE...

America without paper!

No wraps . . . no bags . . . no cartons! Imagine the consternation of Mrs. America at market. Not only would *convenience* vanish . . . but the miracle of American merchandising and marketing methods would disappear almost instantly. Orders, shipments, store stocks . . . all in a state of chaos. America's standard of living . . . and the nation's health . . . would be severely affected . . . the nation's strength and security threatened. *Unthinkable?* Don't take paper for granted. Anything so vitally basic should be thought about . . . and safeguarded. Paper is essential! Use it wisely . . . protect its production . . . to keep America strong.

America depends on

PAPER

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MAKERS OF HIGH-SPEED, HIGH-PRODUCTION PAPER MACHINERY SINCE 1858

CAN YOU USE REPRINTS? This is one of a series of messages Beloit is running in *Fortune* Magazine to remind the U. S. of paper's importance. Reprints for bulletin boards and mailing available. Write to Beloit Iron Works, Beloit, Wis.

COLORADO MILL OK.

$16,000,000 KRAFT PULP PLANT

A certificate of necessity has been granted for the projected first virgin pulp mill to be built in Colorado—the now widely known Columbine Development Co. project. The award, as announced by the Defense Production Administration, revealed the projected mill will make bleached sulfate pulp and this definitely seems to have sounded the death knell to earlier plans for making newsprint at the Glenwood Springs site on the Colorado River.

A tax write-off for a $16,552,000 project is revealed in the DPA certificate. The amount declared eligible for tax relief is $15,846,000 at 65%.

This tends to assure the prospect that promoters of the Colorado mill now will be able to raise the required $10,000,000 for construction under terms of its purchase of some 4,500,000 cords of U. S. Forest Service timber. This timber largely Engelmann spruce, scattered through several counties of central Colorado was bark beetle-infested and most of it is diseased. Reports are the Forest Service is now controlling the spread and that about 1,200,000 cords of green timber is in the timber sale allotment.

Promoter of Columbine is Jess Root, Denver promoter, and F. S. Reed, Denver attorney, is prominent in the organization. The original promoter of the Colorado mill scheme, Preston Walker, manager of the Grand Junction, Colo., newspaper, the Sentinel, is still interested, but his dreams of a newsprint supply for Rocky Mountain newspapers fell by the wayside when their investments were not forthcoming.

Ebasco (Electric Bond & Share Co.) engineering consultants are the engineers for the project. Pulp marketers are interested in the project and the product may be market pulp, or a portion or all may be captive of one or more large paper mills.

Under the timber sale, the Forest Service requires that the new mill be completed by April 30, 1953. A down payment of $100,000 on the timber has been made. The Forest Service has been faced with a huge salvage problem, to get the beetle-infested timber used while it is fit for manufacturing purposes, and much of it is at 8,000 to 11,000 ft. in snow country or rolling plateaus.

At the time of sale in a Washington, D.C., auction, Service aerial photos were shown. The Service listed 3,325,000 cords of beetle-killed spruce and 1,240,000 cords of both live and insect-killed spruce, lodgepole pine and alpine fir. Most spruce is in White River National Forest; smaller areas are in Grand Mesa, Uncompahgre and Routt National Forests.

The Potlatch Forests kraft pulp and paper mill which started up at Lewiston, Idaho, last Christmas week is the first mill to be using virgin pulp in a vast area comprising 15 Rocky Mountain and Western Plains states and covering about half the area of the U. S. This Colorado mill would be only the second one in that entire area (unless the much-talked of Polson project in Montana or some other gets ahead of it).

The mill site is near Newcastle, about 130 miles west of Denver on the Colorado.

MORE DPA CERTIFIED PROJECTS FOR U. S. MILLS

Company	Location	Product	Amount Certified
Pacific Paperboard Co.,	Longview, Wash.	Paperboard	$ 27,272
Clifton Paper Board Co., Inc.,	Whippany, N.J.	Paperboard	$ 5,650,000
West Va. Pulp & Paper Co.,	Mechanicsville, N.Y.	Hardwood pulp	$ 4,100,000
International Paper Co.,	Mobile, Alabama	Chemfibre	$12,926,591
Hollingswirth & Whitney,	Mobile, Ala.	Pulp and paper	$13,800,000
Mead Corp.	(undisclosed)	Kraft board	$21,480,000
Mead Corp.,	Chillicothe, O.	Wood pulp	$ 4,930,530
Mead Corp.,	Kingsport, Tenn.	Kraft pulp	$ 4,258,000
Halifax Paper Co.,	Roanoke Rapids, Va.	Kraft pulp	$ 6,700,000
Gibralter Corrugated Paper Co.,	North Bergen, N.J.	Corrugating board	$ 2,269,850
Fitchburg Paper Co.,	Fitchburg, Mass.	Wood pulp	$ 528,614
Union Bag & Paper Co.,	Savannah, Ga.	Corrugated, paper	$18,000,000
Riegel Paper Corp.,	Columbus County, N.C.	Wood pulp	$13,807,590
North Carolina Pulp,	Plymouth, N.C.	Semi-chem. pulp	$ 1,051,713

Besides the Colorado mill project, reported on this page, the DPA's announcement of defense certificates of necessity during the period between Mar. 7 and Apr. 6 reveals that the entirely new $17,638,000 mill being St. Regis at Jacksonville (Eastport), Florida, has been approved. Also announced:

Plans for a new board mill and container plant for The Flintkote Co., at Santa Clara, Calif., southeast of San Francisco, the first primary mill in that city where Sutherland recently built a converting plant.

An expansion in bleached chemical pulp for Champion at its Canton, N. C. mill; a new board mill at Richmond, Va., for Manchester Board & Paper Co., which already has a mill there and one in Roanoke Rapids, N. C.; glassine expansion for Rhinelander; a chipping plant for a major western lumber mill in Tacoma, Wash., which will supply the St. Regis kraft mill there.

Justin McCarthy, who built St. Regis's paper mill in Tacoma which started up over two years ago, is engineering the Jacksonville mill. A high-speed Beloit 230-in. Fourdrinier machine to make kraft paper for multiwall bags has been ordered for this mill.

Last month we listed previous certificates issued to the pulp and paper industry. Here are the certificates awarded between Mar. 7—Apr. 6:

Company	Location	Product As Listed	Amount Applied for	Amount Eligible	Percent of Tax Amortization
The Flintkote Co.	Santa Clara, Calif.	Paperboard, shipping containers	$ 2,700,000	$ 2,625,000	50%
Rhinelander Paper Co.	Rhineland, Wis.	Glassine, waxed paper	2,929,526	1,436,303	50%
Manchester B'd & Paper Co.	Richmond, Va.	Paperboard	4,000,000	4,000,000	50%
Chesapeake Corp. of Va.	West Point, Va.	Wood pulp	980,815	934,648	65%
Champion Paper & Fibre	Canton, N.C.	Bleached chem. pulp	4,345,742	4,336,418	65%
Roberg Paper Mills	Green Bay, Wis.	Sulfite pulp, toweling	100,000	100,000	65%
St. Paul & Tacoma Lumber Co.,	Tacoma, Wash.	Wood chips	600,000	435,000	65%
Columbine Dev'mt Co.	Columbine, Colo.	Bleached sulfate pulp	16,552,000	15,846,000	65%
St. Regis Paper Co.	Eastport, Fla.	Woodpulp	17,638,000	17,638,000	60%

NEW KRAFT MILL FOR VALDOSTA, GEORGIA

Valdosta, Ga., just 10 miles north of the Florida line and about 135 miles west of National Container Corp.'s Jacksonville, Fla., operation, has been selected by that company for a new $25,000,000 kraft pulp, board and paper mill of 500 tons daily capacity. A DPA certificate of necessity was issued to NCC for Valdosta on May 7.

Valdosta has long been a "hot" prospective site for the next big Southern kraft mill.

Mcre Expansion At East Antioch, Calif.

Fibreboard's huge pulp and paper operations at Antioch and East Antioch, Calif., are scheduled to grow even bigger, according to C. R. P. Cash, the new San Joaquin Division plant manager. Installation of a converting plant to produce the popular Ex-Cell-O Pure-Pak "gable-roof" type milk container will add 80 jobs at the San Joaquin Division in late 1951.

DIVERSIFIED SKILLS

There is a big difference in the skills required for the heavy bull work of preparing the site in muskeg and rock for a pulp and paper mill and those used in installing the delicate electrical system that is the nerve centre of a modern pulp and paper mill.

Yet these were the two jobs completed by B.C. Bridge & Dredging Co. Ltd. at the Columbia Cellulose Mill, Prince Rupert, B.C.

Complete plant construction, from preliminary planning, through site clearing to construction, to machinery installation, is conducted by B.C. Bridge & Dredging Co. Ltd. In this way we provide continuous responsibility and teamwork at every stage of your project—give you an all over saving in both time and money.

Electrical installation in the Columbia Cellulose plant.

Blasting during site preparation for Columbia Cellulose plant.

BRITISH COLUMBIA BRIDGE AND DREDGING COMPANY LIMITED

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Celanese CORPORATION OF AMERICA

CHEMICAL FIBERS AND YARNS . . . WOVEN AND KNIT FABRICS . . . CHEMICALS . . . PLASTICS

ENTERS THE PULP INDUSTRY

AIR VIEW OF TIMBER RESERVES, taken on flight from Prince Rupert to Columbia Cellulose's Khutzeymateen Camp, B.C., and looking back toward Prince Rupert. Show typical timber.

SEE OUR PULPWOOD SECTION—this issue—for a report on timber and logging for the new Columbia Cellulose mill at Watson Island, B. C.

CAMILLE DREYFUS, Chairman of Celanese and former President, who with his brother, late Dr. Henry Dreyfus—both Swiss-born—founded this remarkable company at invitation of Allied Governments in World War I to make cellulose acetate.

KEY TO COVER ART:

Our cover art shows . . .

The familiar script initial "C" and script signature of Celanese . . .

A photograph of its president, Harold Blancke . . . his signature in his own handwriting . . .

A montage of four maps showing the expanding and varied operations of this unique company in the Western World . . .

All backgrounded by a favored Celanese color, chosen for its 1951 Annual Report . . .

Two Swiss brothers, Camille and the late Dr. Henry Dreyfus, who were educated in Switzerland and France, were the founders of one of the most remarkable enterprises of the Cellulose Age. Started in World War I with American, British and Canadian Celanese companies to supply war needs of cellulose acetate, it has grown into a manufacturer of a variety of cellulose, cellulose compounds, industrial chemicals, yarns, plastics, synthetic polymers and allied products, all of them vital to military, as well as civilian needs.

In 1950, net earned income of Celanese Corp. of America was $40,361,166; total sales, $232,483,942. Its 34,949 stockholders (common, 24,605) earned dividends of $17,093,288 ($6.38 per common share).

The garment and carpeting worlds and other customers know it as an amazing company with original ideas of credit policy, customer good-will, as modern as tomorrow . . . A company that can point with pride to having maintained truly phenomenal stability in sales prices of its products, through depressions and inflation (in past year, Celanese yarns up less than 6%, cotton 43%, silk 50%, wood 71%) . . . a company which makes marvelous, revolutionary new fabrics, but refuses to expand its own fabric divisions . . . Instead, concentrates on styling and creating new fabrics and markets for its yarn customers.

On the map of eastern U. S., are shown . . .

Celriver Plant, near Rock Hill, S. C. (where a new acetate staple fiber unit will start up late in 1951; where acetate filament yarn has been expanded); Celco Plant, near Narrows, Va. (where a new acetate staple fiber unit started up in 1950—Celanese new "Celcos" fiber and acetate staple fiber were successfully introduced into the carpet industry); and other Celanese plants at Newark and Belvidere, N. J.; Williamsport, Pa.; the Amcelle Plant, near Cumberland, Md.; Bridgewater, Staunton and Hopewell, Va.; Burlington, N. C., and Rome, Ga., and research labs at Summit, N. J. New units to make plastics film and sheeting were to be completed later in 1951.

On the map of Mexico and Texas, in our cover art, are shown . . .

The Chemcel plant at Bishop, Tex. (important supplier of acetic acid and acetone for company needs; paraformaldehyde output was expanded with a new Formcel product; another new unit in 1950 increased output of glycols); research center at nearby Clarkwood, Tex.; and projected new plant at Pampa, Tex.

In Mexico a booming rayon industry was virtually created single-handed by Celanese, as reported in a visit of these mills by a PULP & PAPER editor (see Aug. 1948 issue, page 34 "Celanese fiber" is actually, something different than orthodox rayon). Celanese had started in Mexico City, purchasing in 1942, Artisela Mexicana, converting it from textiles to viscose. Celanesa Mexicana, at Ocotlan, near Guadalajara, started up four years ago with acetate spun at Cumberland, Md., Viscosa Mexicana, at Zacapu, midway between Guadalajara and Mexico City, started up about two years ago. Ocotlan and Zacapu have, and are, being expanded in '50-51. At Rio Bravo, a cellulose plant is under construction. Meanwhile, pulp from Prince Rupert will partly supply these Mexican plants, PULP & PAPER was informed on its tour.

On the map showing Columbia and Venezuela . . .

Being completed in 1951—the acetate yarn plant at Yumbo . . . A new project is started at Valencia, Venezuela.

And, finally, on the Pacific Northwest map . . .

Watson Island mill (Columbia Cellulose) near Prince Rupert, designed to help relieve a worldwide shortage of cellulose. The projected chemical plant at Edmonton, Alta., to produce cellulose acetate and industrial chemicals on a large scale, by processes originated in Texas.

A COMPLETE DESCRIPTION OF NEW MILL

COLUMBIA CELLULOSE CO. LTD.

A new industry destined to revolutionize the economy of Northwestern British Columbia is in production.

It is the $27,000 dissolving pulp mill of Columbia Cellulose Co., Ltd., Canadian affiliate of the giant Celanese Corp. of America, initially geared to produce more than 200 tons of high alpha cellulose daily for the use, primarily, of Celanese textile and plastic plants.

This new mill, located on Watson Island, ten miles south of Prince Rupert, is the first sulfite mill built in Canada since before World War II and is one of the most modern of its type.

At this stage there is no telling how far the influence of Columbia Cellulose Co. will extend through Canada's far northwest. Not only is it likely that the company itself will expand its operations and diversify its production as well as increase output of pulp available for the acetate rayon process, but there is good reason to believe that existence of this big new plant will provide the foundation and incentive for creation and growth of kindred wood industries.

HAROLD BLANCKE, President of Celanese Corp. of America, and President of Columbia Cellulose Co.

Prince Rupert History

Prince Rupert, adjacent to Watson Island, is one of British Columbia's larger cities and Columbia Cellulose Co. represents its first big, permanent, all-season industrial operation with a substantial payroll. Like many other "frontier" communities Prince Rupert has had its ups and downs. Prince Rupert's first boom rode in on the broad back of the colorful Charles Melville Hays, the American railroader with a dream to build a transcontinental railroad whose Pacific terminus would be Prince Rupert. Hays did not live to see his dream come true; he perished when the Titanic sank in the North Atlantic in 1912, but two years later the Grand Trunk Pacific tracks reached Prince Rupert. By that time the world was at war and railroad financing almost impossible. The Canadian government eventually took over the Grand Trunk Pacific; Prince Rupert's boom had "bust."

But Prince Rupert never lost hope. Its fishing industry, mostly halibut and salmon, was important, even though it did languish in winter, and has been the area's chief sustenance. During World War II the population rose from 5,500 to 27,000 as a result of establishment of a U. S. military supply base for Alaska, the Aleutian Islands and the South Pacific. When this activity ceased, Prince Rupert was back in the doldrums, to be revived in 1947 when Harold Blancke, president of Celanese Corp., visited the city as unobtrusively as Hays had been ostentatious and announced that the region had been chosen as site for the pulp mill.

Pulp production and other wood-using industries which may follow in the wake of the Columbia Cellulose Co.'s initial project are expected to give the British Columbia seaport and its surrounding region an economic stability it has never previously known.

Columbia Cellulose Co., however, has more than regional significance. The mill itself has features of interest to everyone concerned with pulp production. In more than one respect this is a unique development, and from the standpoint of overall forest utilization, Columbia Cellulose Co. made an important and historic move even before the mill's construction when it negotiated with the British Columbia government the first forest management license to be issued under the province's new program designed to insure a perpetual timber supply by limiting cut to natural rate of growth.

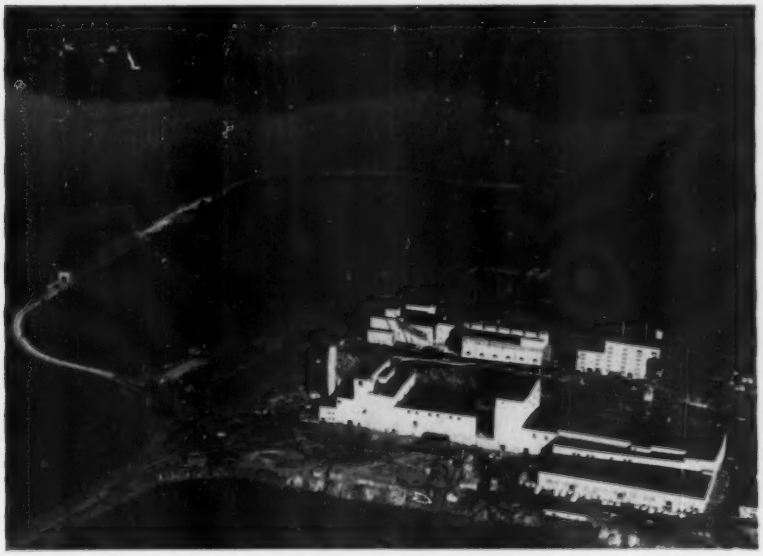
When Celanese Corp. first became interested in establishing a mill in British Columbia, various sites were considered. Several factors gave Watson Island an advantage—its access to extensive stands of hemlock, balsam and other suitable non-resinous pulpwood species; its tidewater location, access to fresh water, lime rock, coal, transportation facilities and proximity to an established community.

Furthermore, military and naval activities during World War II had made Watson Island in several particulars a ready-made site. Part of the island had been levelled for storage and a big, well-constructed wharf had been built.

After company engineers had studied the site it was decided to build the mill on two levels, which necessitated considerable excavating during the early stages, this being carried out by B. C. Bridge & Dredging Co. of Vancouver, which played an important part in construction of other recent new mills in British Columbia. About half a million cubic yards of rock were removed.

Precast Slab Construction

The buildings themselves are of interesting construction, precast concrete slabs having been used for the so-called "sandwich walls" and roofing. The walls have



AIR VIEW OF COLUMBIA CELLULOSE CO., showing how curved railroad wharf—a military relic of World War II—serves as a ready-made log pond. It connects at both ends to Watson Island. Log haul, believed world's longest, can be seen to left of mill buildings in background.

GEORGE SCHNEIDER (left), Senior Vice Pres., Celanese Corp. of America, and Vice Pres., Columbia Cellulose Co. Ltd.

GEORGE H. RICHARDS (right), Vice Pres. and Treas., Celanese Corp. of America and Vice Pres., Columbia Cellulose Co. Ltd.

a layer of Foamglas insulation supplied by Pittsburgh Corning Glass Corp., held together between two layers of concrete in panel form. Full-sized panels were first tested at L'Ecole Polytechnique, Montreal. The slabs were cast at the site in a streamlined plant using materials fabricated under contract with Creaghan & Archibald, Ltd., of Toronto. Use of this type of wall expedited construction during wet weather and permitted savings in foundation, erection, handling and skeleton frame costs. Roof slabs were also more economical than the more conventional pouring technique, and the walls provide protection of the purified pulp against contamination. Sewer pipes were tile-lined by a process developed by Celanese engineers.

When panels were needed they were delivered by lift trucks with spreaders or, on long hauls by a flat-bed truck with a wood carrier rack. The panels were raised by a job-made, rubber-tired mobile hoist which traveled along the edge of the roof. Sandwich slabs were set on edge in mortar, one above the other, from grade beams to roof. They were held against the steel building frame with a malleable iron clamp, a sheet lead washer and single bolt at each corner. From 20 to 30 panels were installed in each 8-hour shift.

On the 64-foot level the power plant, wood room chip storage and coal storage were built. Below, on the 18-foot level were installed all the operating departments and the acid plant, digester room, screen room, bleachery, chemical mixing, pulp drying, finishing, shipping, warehouse buildings and office. Also on the lower level are the limestone, sulfur and chemical storage. The railroad runs along the west side of the plant between the general mill building and wharf. The lagoon formed between wharf and mill is used as log storage, 50 acres in extent, capable of storing 5,000,000 feet of logs. Facilities are available for the shipment or receipt of pulp or supplies by either rail or water, although most of the pulp shipments, at least during the early stages, will be by rail. The present wharf has accommodation for rail loading with a spur line running its entire length.

Pipeline Through Tunnels

Uninterrupted supply of water for this project—initially about 11,000,000 gals. daily—was essential, and this created an interesting engineering problem involving utilization of a chain of lakes over seven miles to the east of the plant. The water service for the presently planned production of the mill required 29,000 feet of 48" diameter wood stave pipe, to which an additional parallel pipeline may be provided when need arises. A considerable length of this pipeline is carried on timber trestle over tidal lands, and three rock tunnels aggregating a mile in length, all lined with reinforced concrete, serve as aqueduct connecting the various sections of the wood stave pipe. The rock tunnels, 1¾ miles long, are of such dimensions as to function without alteration when consumption increases to meet the expanded production of the plant.

The firm of Campbell-Bennett, Ltd., construction engineers and general contractors, Vancouver, handled all work in connection with the water supply, which included grading for and laying of the 48 in. pipe, construction of rock tunnels and concrete lining thereof, building timber trestle to carry a section of the pipe over tidal lands and other miscellaneous work.

Surveys on the watershed of Prudhomme, Rainbow and Diana Lakes showed that for the initial period of mill operation the watershed flowing immediately out of this lake system was adequate, but it was necessary to impound this water to take care of the long dry period of the summer and late winter months. The dam site chosen required the grading of a pipeline site from the mill to Kloiyah, approximately 35,000 feet away. The pipe,

FRED T. SMALL (left), Vice Pres., Celanese Corp. of America, and Vice Pres., Columbia Cellulose Co., Ltd.

DR. RALPH BALL (right), General Mgr., Cellulose Division, Celanese Corp. of America.

fabricated by Canadian Wood Pipe & Tank Co., runs alongside the Prince Rupert-Terrace highway, Terrace being one of the company's principal logging centers. The 234 ft. concrete gravity dam is a solid concrete structure incorporating a fish ladder with the crest at an elevation of 90 ft., although stop logs can be inserted to bring this up to approximately 94 ft. The main ground floor level of the mill being 18 ft. 9 in., it is estimated that 50 ft. of this head differential will be lost in pipe friction at maximum plant production.

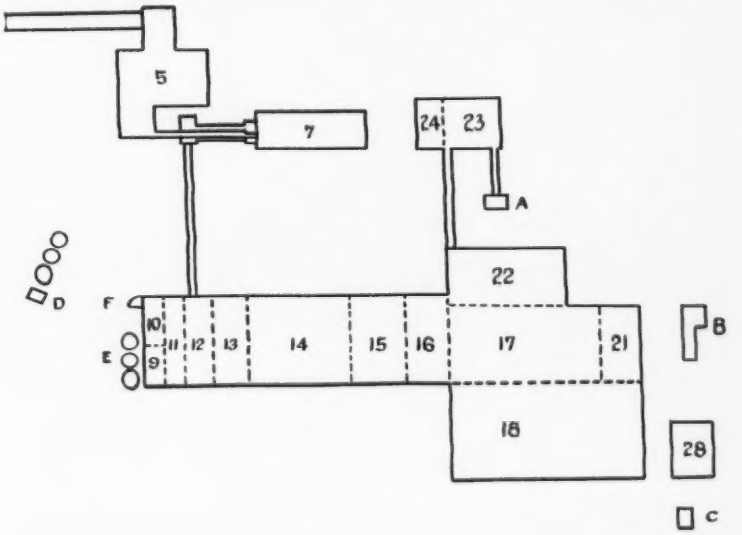
Wood Room—Hydraulic Barker

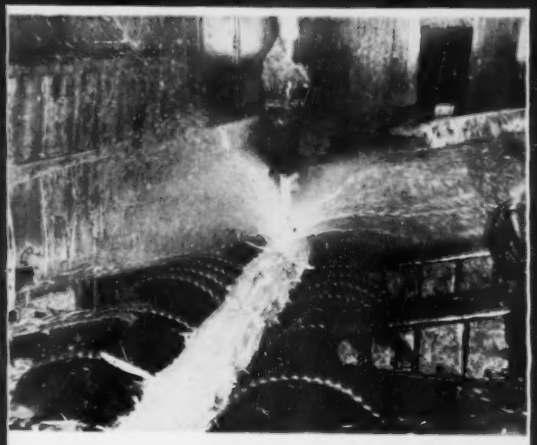
The wood room of the plant, 100 ft. above sea level, is so arranged that logs broken from flat rafts and maneuvered into the lagoon or pond may be fed up singly by Esco, Ltd. (Electric Steel Foundry Co.) conveyer on the longest and highest log haul in any west coast mill. Some idea of the height and length may be grasped from the fact that it runs over and above

GENERAL LAYOUT OF ALL BUILDINGS OF COLUMBIA CELLULOSE LTD.:

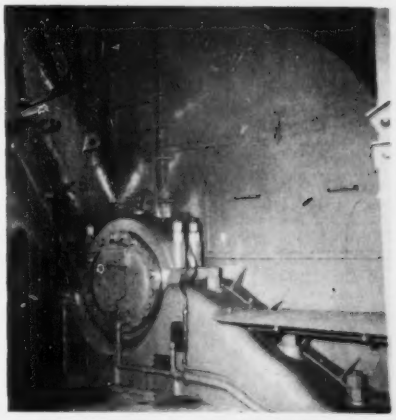
1—Log Haul; 5—Wood Room; 7—Chip Storage; 9—Sulfur Burner; 10—Acid Making; 11—Acid Recovery; 12—Digesters; 13—Pulp Washing; 14—Unbleached Screenings; 15—Bleach Plant; 16—Bleached Screening; 17—Dryer Room; 18—Pulp Storage; 21—Machine Shop; 22—Water Treatment Plant; 23—Boiler House; 24—Generators; 28—Offices and Laboratory.

A—Coal Pit; B—Garage; C—Gatehouse; D—Chlorine and Caustic Storage; E—Sulfur Silos; F—Limestone Towers.





The SUMNER "Bellingham type" whole log hydraulic barker shown above is the same as that installed at the Prince Rupert mill of Columbia Cellulose Co. Ltd. This barker was built by the Canadian Sumner Iron Works Ltd., Vancouver, B. C. to hydraulically remove bark from logs before they enter the 153" whole log chipper.



The 153" whole log chipper shown above was installed at the *new Columbia Cellulose Mill, Prince Rupert, B. C.*

This large chipper and Columbia Cellulose's 10' Bandmill were built by the SUMNER IRON WORKS in Everett, Washington.

3550 EAST BROADWAY VANCOUVER, CANADA

the main line of the Canadian National railroad. Actually, the haul is in two sections, the lower being 179 ft. from tail pulley to head sprocket, and the upper 283 ft., for a total length of 462 ft. Vertical height of the haul is 90 ft. Four hundred horsepower is required to motivate the log haul, this being accomplished with two separate 200 h.p. drive units installed by United Steel Corp. and Hamilton Gear & Machine Co.

At the head of the haul the log is stopped by a hydraulic mechanism and cut off to 20 ft. lengths by a 108 in. Spear & Jackson saw and fed into a Bellingham-type hydraulic barker (see PULP & PAPER, Oct. 1948). The barked wood is transferred along chain conveying sections to live rolls where the transfer man has the choice of three routes. First, where the log is clean and of the right diameter it is immediately fed to the chipper; second, where the log is of correct diameter but barky or dirty it is fed to the clean-up conveyer where bark seams, adhering bark, etc., are removed with mechanical hand tools; third, where the log is clean but the diameter too great for chipper it is transferred to a quartering saw, then fed forward to the 153 in. Sumner chipper.

W. C. R. JONES, Mill Manager at Watson Island—had experience in Canadian IP, Consolidated and Howard Smith; helped design Australian mill.

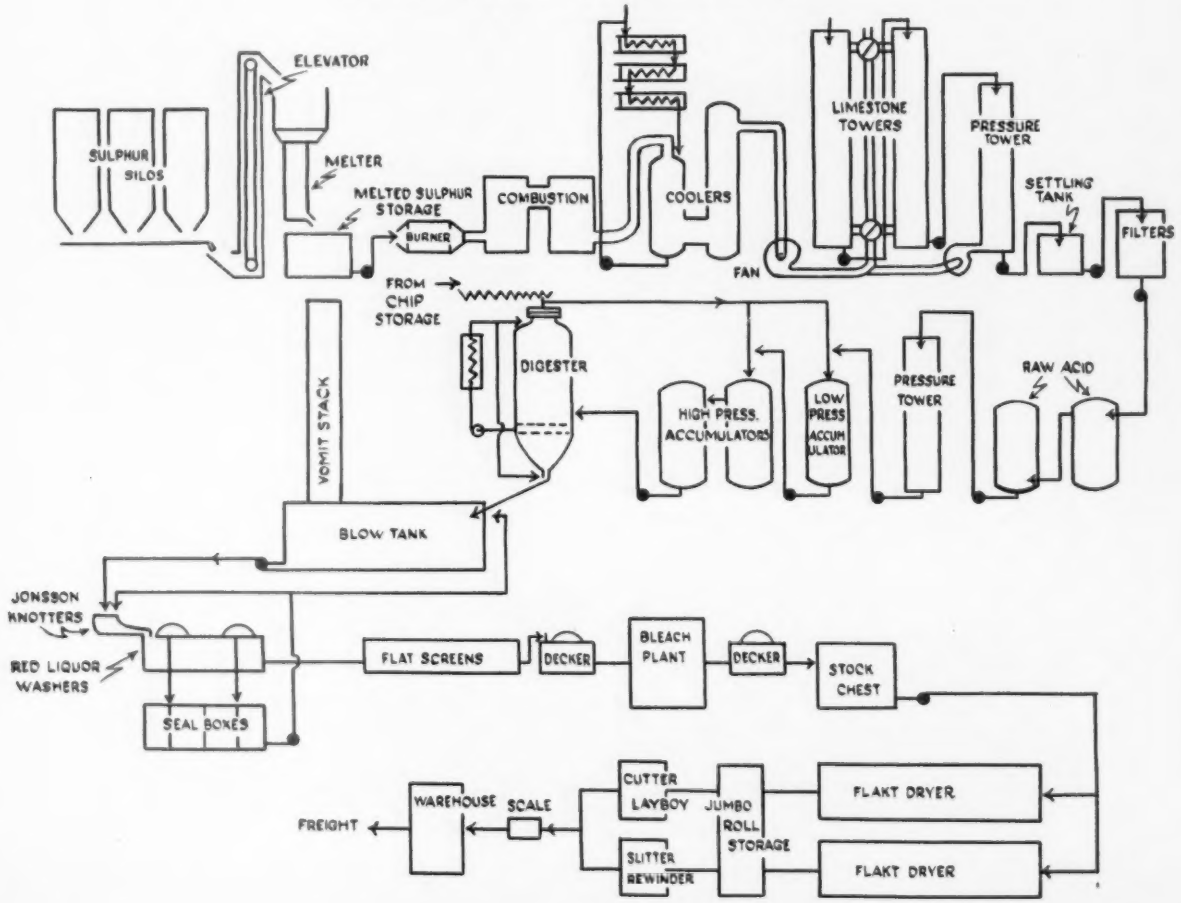
A Champion chain saw is used to cut off the larger logs.

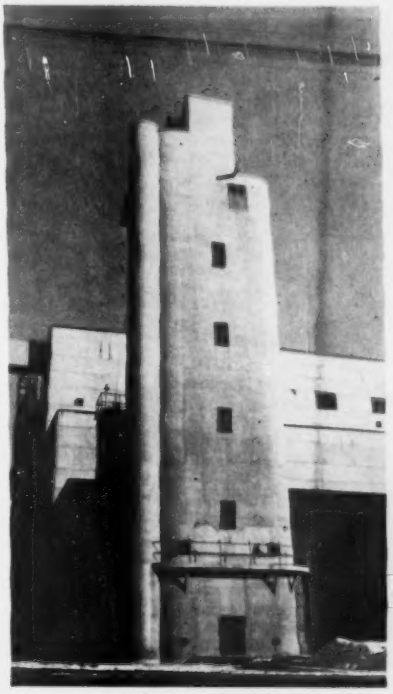
The hydraulic barker handles logs up to 60 in. diameter by 24 ft. long and uses high pressure water from a Bingham pump, delivering 1000 gallons per minute at 1400 p.s.i. pressure. Drive for this pump is from a 1000 h.p. Electric Machinery Manufacturing Co. motor running at 3600 r.p.m. Although following the general design of the prototype Bellingham unit, the barker is fitted with a special nozzle design which allows the jet of water to be turned at the operator's will to any angle which is found desirable as the logs are being barked. Barker and wood room equipment will handle 200,000 f.b.m. per 8-hour day.

Most of the machinery and equipment in the wood room was manufactured or installed by Canadian Sumner Iron Works, and because of the high quality of the end product of the pulp mill, special arrangements were made throughout to insure maximum wood cleanliness. The section in the wood room where oversize logs are quartered consists of a no-man carriage controlled by the sawyer carrying logs through a 10 in. band mill. The no-man carriage consists of two headblocks with air-operated dogs mounted on a structural steel frame on which are operated two 7½ h.p. motors which operate the knees. The carriage runs on six sets of carriage trucks, each fitted with 20 in. diameter wheels fitted with Timken roller bearings.

The chipper—a six-knife 153 in. unit—was built at the Everett, Wash., Sumner plant. It is driven by a 1500 h.p. Electric Machinery Manufacturing Co. motor at 277 r.p.m. This machine handles logs up to about 30 in. diameter, the spout having an opening of 26 in. x 34 in. A chipper chute and log retarder, the latter with a

FLOW DIAGRAM FOR NEW MILL OF COLUMBIA CELLULOSE CO., LTD.



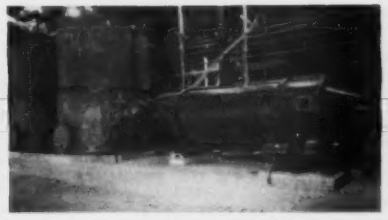


G. D. JENSSEN

RAW ACID PLANT

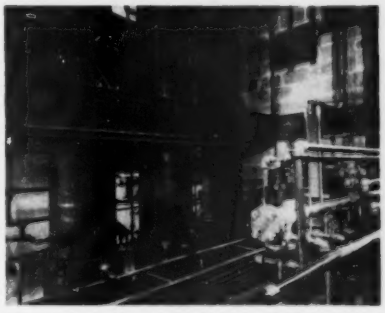
At Watson Island Mill of

COLUMBIA CELLULOSE CO. LTD.

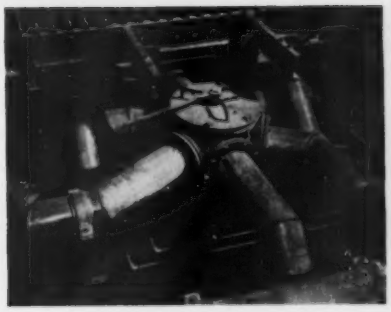


Jenssen Rotary Vaporizer Tandem Combustion Chambers

Jenssen Towers With Skip Hoist and Man Lift Elevator



Jenssen Tubular Sulphur Melters



Jenssen Six-Way Acid Valve Assembly

G. D. Jenssen Co., Inc., designed and built the following for the raw acid plant of this new high-alpha pulpmill:

- Sulphur Melting and Molten Storage
- Sulphur Burning Plant
- Spray Gas Coolers
- Acid Towers
- Pressure Acid Making System
- Settling Tank and Acid Filters

We are also Designers and Builders of:

Jenssen Pressure Acid Systems, Jenssen Auxiliary Process Towers, Recovery Plants—Cooking Acid, Soluble Base Acid Plants, Semi Chemical Plants, Jenssen SO_2 Absorption Systems, Sulphurous Acid Preparation for Bleach Plant Application.

G. D. JENSSEN CO. INC.

330 Electric Building — Watertown, New York

S. B. ROBERTS (upper left), Chief Engineer for Celanese Corp., New York, was largely responsible for engineering of Columbia Cellulose Mill.

CHARLES H. KLOTZ (upper right), Resident Engineer and Project Mgr., was in charge during construction stages at Watson Island.

COLUMBIA CELLULOSE Key Men (lower row—l to r): ROY EVANS, Operating Supt. (was with Price Bros. and Bathurst); JIM MACRI, Construction Supt. (directed Celanese projects in U.S. and Mexico); and MERVIN E. MARTIN, Technical Supervisor (spent years of research at Cumberland, Md.).

hinged apron operated through a hydraulic cylinder and pumping unit, are used to feed logs to the chipper.

Handling refuse from the wood room conveyed by Esco Ltd. manganese chains, are two Sumner 48 in. hogs, each driven by a 125 h.p. English Electric motor. Between the second and third flat roll cases another 108 in. saw is used to trim out waste sections of logs from the no-man carriage. In the filing room is an Armstrong automatic band saw sharpener and Rogers No. 154 knife grinder.

Jeffrey conveyers take chips to a surge bin over chip feeders which in turn feed the Dillon vibrating screens, five Sumner chip feeders, driven by 5 h.p. speed reducers, taking care of this operation. The rechipper is by the Jeffrey. The chip storage building was designed by Stadler, Hurter & Co., consulting engineers of Montreal and New York, and here species are segregated into any one of the 12 bins, totally inclosed in the building. The chips are extracted from bottom aprons onto one of two conveyers and taken over weight meters to the uptaking conveyer to digesters.

How Digesters Are Filled

A series of interesting interlocks come into play in filling digesters. The cook sets up on an electrical switch mechanism a prescription of chips of any particular species. Upon pressing one button, the whole system from the chip bins on will go into operation, extracting only that species and that quantity of chips prescribed by the cook. If the weight meter electrical relay system does not indicate that chips are being extracted at a certain rate from any bin the electrical control assumes that bin is empty and automatically transfers the extracting mechanisms to another bin of the same species. Matthews Conveyors are used in chip storage.

The mill has five 10,000 cu. ft. digesters, built by Dominion Bridge Co. They are 59 ft. high with a diameter of 19 ft. They were erected, welded, X-rayed and stress-relieved in the field. X-raying was accomplished through radio-active cobalt isotopes lowered inside the digesters. Stress relieving was achieved by portable oil furnaces which circulated hot gases through the digesters for a prescribed period.

The digester circulation system is furnished by Chemipulp Process Inc., Watertown, N. Y., who also designed the hot acid system. Protective linings in the chests and digesters were provided by Canadian Stebbins Engineering & Mfg. Co., Ltd., of Montreal. The supply of raw acid is from combustion of Texas Gulf Sulphur Co.'s product delivered in pool shipments for British Columbia plants.

Raw Acid Plant

The raw acid plant at Watson Island was designed and furnished by the G. D. Jenssen Co., Watertown, N.Y.

In the raw acid plant, sulfur is conveyed by automatic feed to the Jenssen-Hamilton type sulfur melters. From molten storage the sulfur is fed by regulating control to the Jenssen sulfur vaporizer, which is followed by a set of tandem combustion chambers. Gas coolers are direct spray type equipped with separate heat exchanger unit.

The Jenssen two-tower unit is a structure consisting of a skip hoist to handle limestone to the reversible towers and a man lift elevator. The towers are equipped with a separate fan exhauster arrangement. Raw acid from the Jenssen towers is processed through a Jenssen pressure acid fortification tower, equipped with a gas compressor. Settling tanks and acid filters condition the acid and remove foreign matter and suspended solids. A separate chrome nickel steel clearwell collects the acid following the acid filters. Settling tank is conventional gravity type followed by gravity type sand filters.

Lime rock is from the company's own quarry on Smith Island about six miles away. The raw acid goes to two Hortonsphere raw acid storage vessels, a stainless steel backed constant level pressure absorption tower, one low-pressure accumulator and two high-pressure accumulators. These vessels have such a large acid capacity in relation to digester volume that acid strength is expected to remain very constant once satisfactory operating conditions are established. Indirect cooking, indirect heating is used in the acid system designed by Chemipulp.

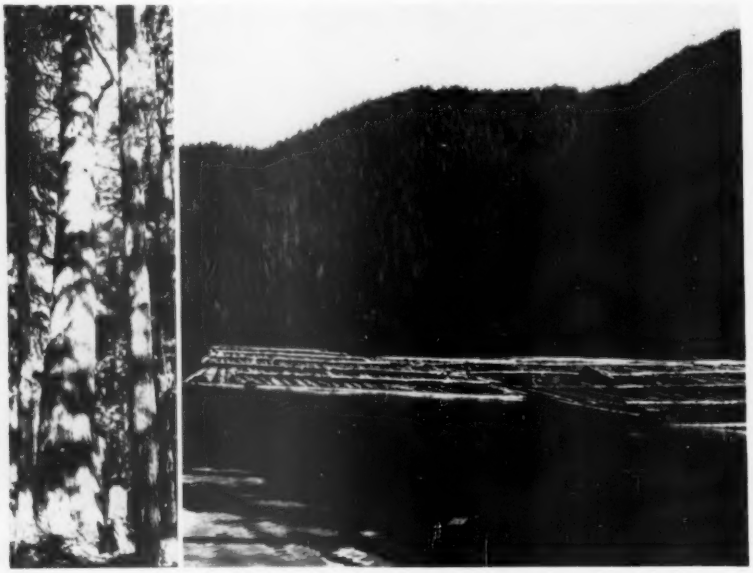
Columbia Pulp Used In New Alberta Plant

In addition to the Columbia Cellulose Co. mill at Watson Island, Celanese Corp. of America has initiated another interesting industrial development in Canada which will have a direct relationship with the British Columbia project.

Celanese is starting construction soon of a big petro-chemical and cellulose acetate plant near Edmonton, Alberta, to be known as Canadian Chemical Co.

Acetic acid produced in this new plant will be combined with pulp from Columbia Cellulose Co. to manufacture cellulose acetate, the primary raw material for acetate yarns and plastics.

The Edmonton plant will tap the natural gas resources of the rapidly expanding petroleum fields of Alberta to manufacture many basic organic chemicals never previously produced in Canada which have broad applications in defense, war and peacetime economies.



NOTE SIZE OF MAN AT LEFT, standing beside giant spruce and hemlock at Khutzeymateen Inlet, site of Columbia Cellulose logging camp. Such trees, when taken out, probably would be sold for sawtimber. At right is log boom raft for the pulp mill, in the same inlet.

Congratulations to

Columbia Cellulose Company

on forceful leadership in constructing and bringing into operation their great industrial plant at Prince Rupert which is a substantial contribution to the expanding economy of British Columbia.

We were fortunate and honoured in having been selected as General Contractors to build such facilities as the mile of rock tunnel, laying of 29,000 feet of 48 inch wood stave pipe, excavation at millsite, and other miscellaneous work in connection with this outstanding project.

CAMPBELL-BENNETT LIMITED

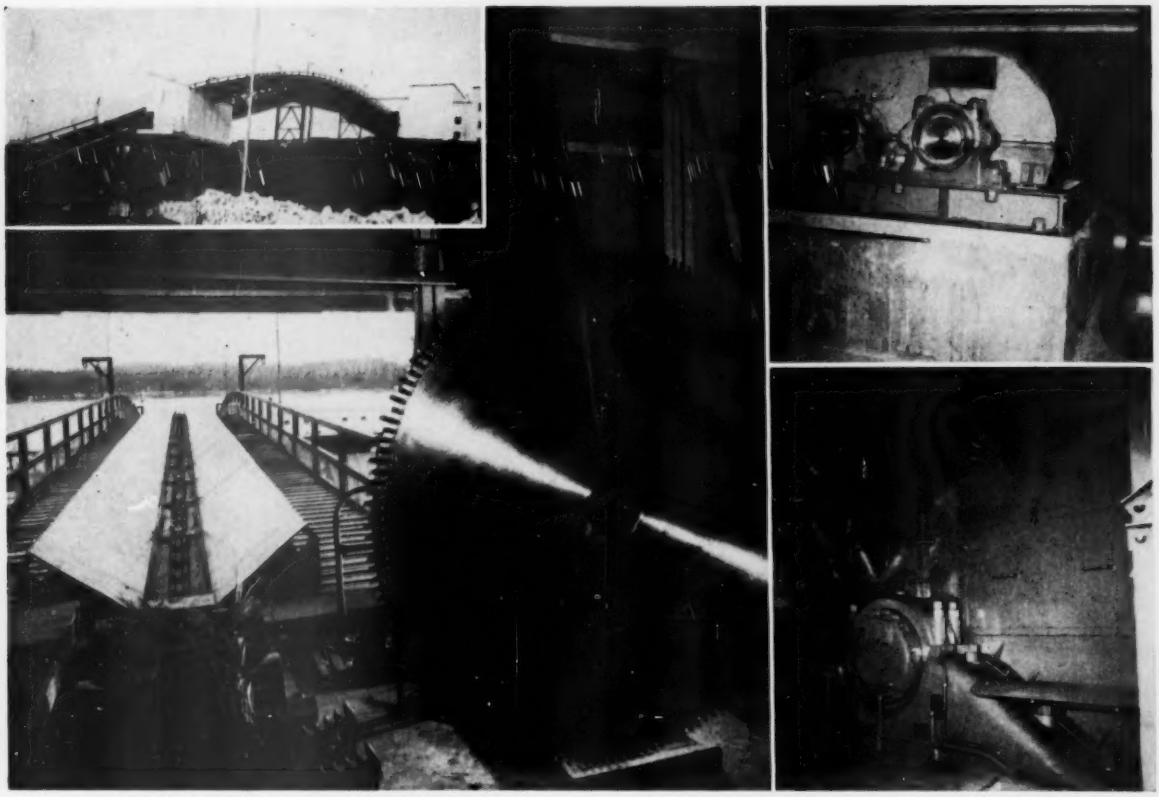
CONSTRUCTION ENGINEERS & GENERAL CONTRACTORS

1718 WEST FIFTH AVENUE

VANCOUVER, B. C.

BUILDERS OF

HIGHWAYS, RAILROADS, BRIDGES, HYDRO-ELECTRIC PROJECTS, WHARVES, PULP & PAPER PLANTS, WATER SUPPLIES, SEWAGE DISPOSAL SYSTEMS, AND PIPE LINES TO SERVE ANY PURPOSE.



BELIEVED TO BE WORLD'S LONGEST AND ONE OF HIGHEST LOG HAULS, this all-steel conveyor shown in two views at left is one of main attractions at new Columbia Cellulose plant. Esco Ltd. (Electric Steel Foundry Co., Portland, Ore., and Vancouver, B.C.) supplied the manganese chain, steel chairs, manganese-toothed sprockets and drums components of the chain which, of course, had to be substantially more than double the phenomenal 462-ft. length of the haul. It passes over railroad main line; is 90 ft. high. Also shown here is Spear & Jackson 108 in. headsaw ready to swing in action on first log to enter mill. Live rolls were supplied by Canadian Sumner Iron Works. At top right is Squier Bark Press, new type of press supplied by Squier Corp., subsidiary of Buffalo Pumps. At lower right is Sumner 6-knife, 153 in. chipper.

The digesters are fully instrumented.

Pulp is blown into one of three blow pits which are each arranged with three agitators and two pumps. Agitators are supplied by William Kennedy & Sons and Port Arthur Shipbuilding. Provision is made for addition of a predetermined quantity of diluted waste liquor so blow tanks are rapidly brought to a uniform consistency.

Washing and Screening

The blow is pumped immediately to Jonsson knotters supplied by Canadian Ingersoll Rand Co. and then to Sherbrooke Machineries washers. Homad linings are extensively used in this part of the mill.

The Sherbrooke brown stock washing system consisting of two 8 ft. x 16 ft. all stainless steel vacuum washers, with space set aside for a third washer in case the company wishes to recover waste liquor at a future date. In the brown stock system are two 8 ft. x 12 ft. double valve type rubber covered vacuum deckers for stock thickening. Pulp is pumped through a series of chests to allow a very high measure of blending and it is then diluted and flat screened. Waterous, Ltd., has supplied 64 direct action flat screens. The rejects are rescreened, meet the knotter rejects and flow to refining and wet lap for sale. Rejects go to a Bauer refiner.

The Bleach Plant

Screened pulp is deckered and pumped through the bleach plant and emerges as a white high alpha cellulose ready for deckering and drying. Deckers are from Sherbrooke Machineries.

The bleaching process is by Celanese Corp.'s own formula and a complete description of the bleach plant is for that reason not available, Sherbrooke Machineries provided a good deal of the equipment needed here, including stock volume meter to control consistency and volume entering the bleaching system, six 8 x 16 ft. vacuum washers for washing and thickening pulps from various stages, two 8 by 12 ft. rubber-covered vacuum deckers for thickening stock after the bleach stock screens. Linings in bleach plant chests were by Homad Services, Montreal.

Homad also lined large processing tanks at the mill.

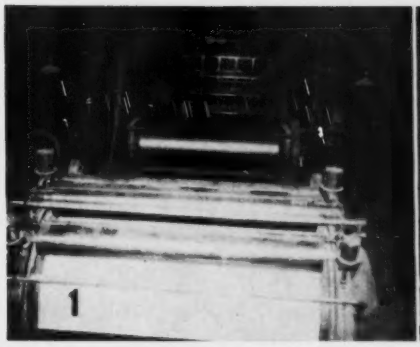
Caustic and chlorine for the mill are supplied by Hooker Electrochemical Co.'s Tacoma, Wash., plant by special barge with a capacity of 150 tons of liquid chlorine and 1500 tons of caustic soda dilution. Contract for the transportation of this material has been awarded to the Griffiths Steamship Co., which will maintain monthly deliveries.

Many of the pumps used throughout the mill are Canadian Buffalo units, supplied by Canada Pumps, Ltd. and ventilating fans were installed by Canadian Blower & Forge Co. Both concerns are in Kitchener, Ont., and are affiliated with Buffalo Forge Co., Buffalo, N. Y.

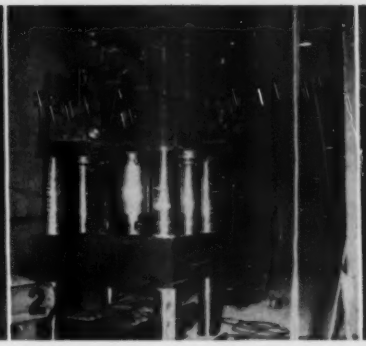
Pulp Drying

The two pulp drying machines consist of PML Kamyr wet ends and Flakt dryers, supplied by Paper Machinery Co., Ltd., of Montreal, fabricated by that company's associated Canada Iron Foundry at Three Rivers, Que. Wet section on each machine consists of a PML Kamyr cylinder mould of 100 in. diameter and of central drainage type. This is the first one of the kind of this large diameter to be installed on the continent, the usual size being 79 in. The remainder of the wet section consists of two heavy type KMW felt presses equipped with Foxboro leading device, with the standard pre-dryer, in between the two previously mentioned presses. Each Flakt dryer of eleven decks has a net length of 122 inches.

Hot water apparatus and additional heat recovery equipment for preheating the ventilation air to the machine room were also supplied. **(Continued on page 55)**



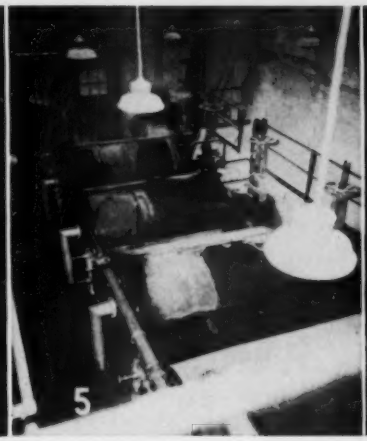
1—ONE OF COLUMBIA CELLULOSE'S TWO PULP DRYING MACHINES consisting of PML Kamyrs and Flakt dryer, shown in background. Wet end has 100 in. diameter, much greater than usual.



2—HYDRAULIC MACHINERY CO.'s 830-ton capacity hydraulic press at Watson Island, shown here, handles pulp bales conveyed from the cutter and layboy.

3—SECTION OF DILLON SCREEN installation. These vibrating screens are fed by conveyors through Sumner chip feeders. The rechipper is by Jeffrey.

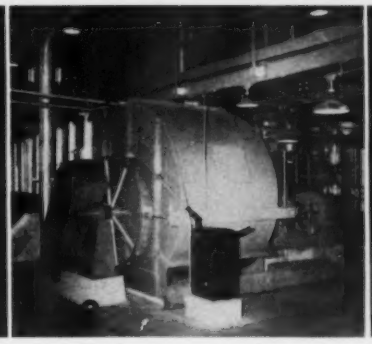
4—WOOD STAVE PIPELINE 29,000 feet long passing through three tunnels and over a trestle carries water to Columbia Cellulose mill from chain of lakes. Pipeline was laid by CAMPBELL-BENNETT, Ltd., Vancouver contractors.



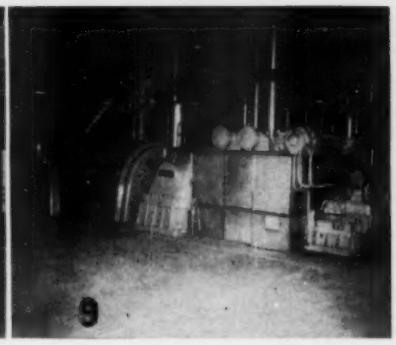
5—GREEN BAY FOUNDRY supplied Columbia's filtration plant rotary filter screens shown here. Incoming water is admitted to the screens by manually-controlled valves.

6—SOME OF THE PUMPS AT WATSON ISLAND (Canada Pumps) affiliated with Buffalo Pumps Inc., with Chapman and McAvity valves serving the pulp drying machines.

7—COAL IS BURNED at Columbia Cellulose Mill through spreader stokers and chain grate stokers supplied by FOSTER WHEELER CORP., one of currently interesting improvements.

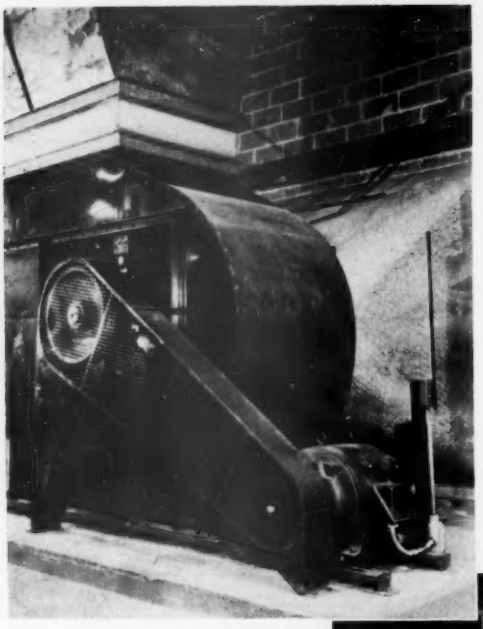


8—FOSTER WHEELER CORP. EQUIPMENT is widely used in the steam plant. Here is a F.W. forced draft fan with Bailey control operated in connection with turbines.



9—ONE OF THE 7500 KILOWATT Worthington turbines in steam plant installed by JOHN INGLIS CO. Steam is generated at 600 lbs. pressure 750 degrees F.

"Canadian Buffalo" PUMPS AND CELANESE MILL



Canadian-Buffalo Type "LL" Fan, for quiet, efficient long-life ventilating service.

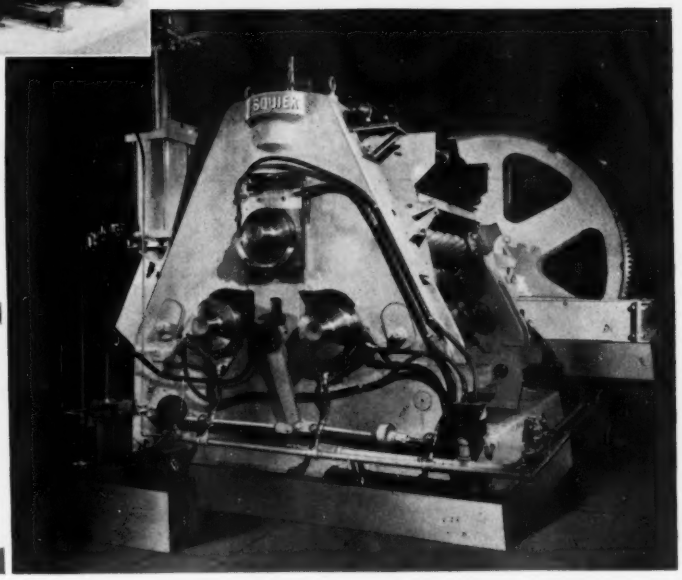
When engineers of Columbia Cellulose, Ltd., selected the equipment for this most modern sulphite dissolving mill in the world, performance of every piece of equipment was subjected to their careful scrutiny.

We are proud to announce that 133 pumps, all the ventilating fans and a bark-crusher are products of our Canadian subsidiaries, Canadian Blower & Forge Co., Ltd., and Canada Pumps, Ltd.

The majority of the stock pumps are stainless steel, Ni-resist or rubber-lined.

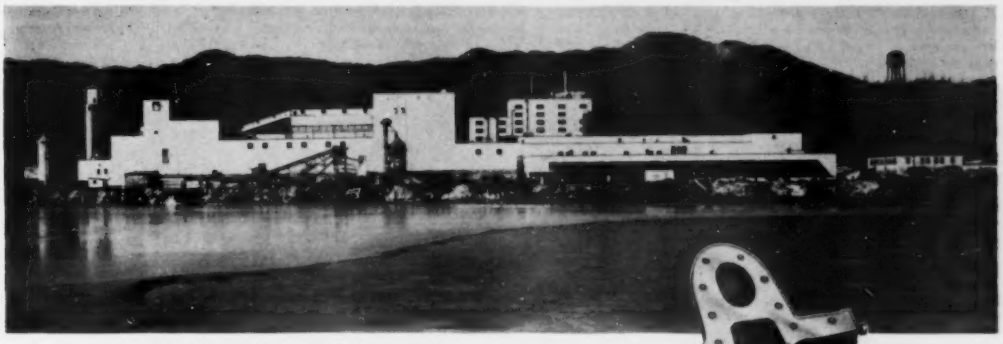
Ventilating fans are high efficiency Type "LL" non-overloading fans.

The Bark-Crusher, a recent development of the Squier Corp., Buffalo associate, is used to extract moisture from bark preparatory to burning in mill boilers.



This SQUIER Bark Crusher extracts moisture, shreds bark for efficient combustion.

FANS AT NEW • AT WATSON ISLAND

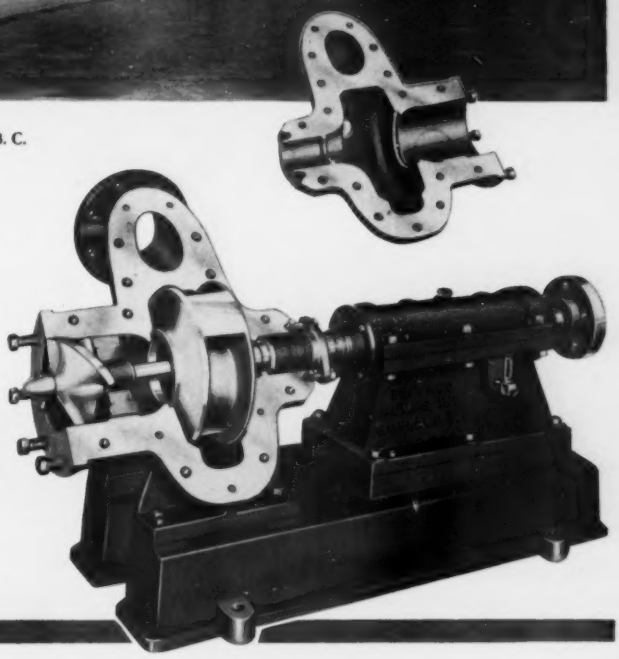


The large modern mill of
Columbia Cellulose, Ltd., Watson Island, B. C.

When you consider the purchase of new equipment for your mill, benefit by "Buffalo" experience in the pulp and paper field.

Have these fans and pumps in your mill!

Ask us for recommendations and prices before you select equipment. Find out why Columbia Cellulose, Ltd., standardized on "Buffalo" Pumps and Fans. No obligation.

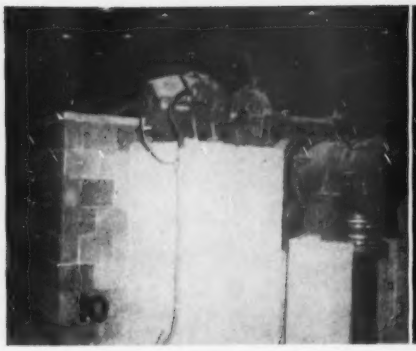


Most of the stock pumps are of this "Buffalo" diagonally-split shell type, with enclosed impeller, which do not lose their initial high efficiency.

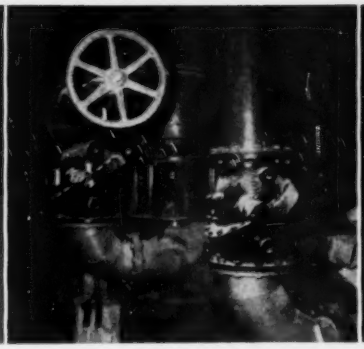
BUFFALO FORGE COMPANY

BUFFALO PUMPS, INC.
186 Mortimer Street
Canadian Blower & Forge Co., Ltd.

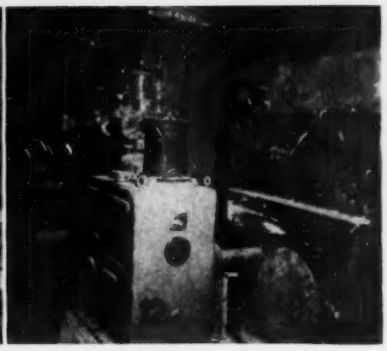
THE SQUIER CORP.
Buffalo, New York
Canada Pumps, Ltd., Kitchener, Ont.



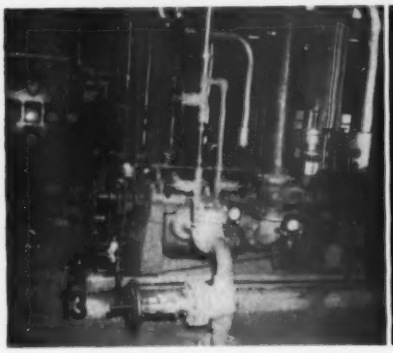
10—HOMAD-LINED SHERBROOKE vacuum filter at Watson Island. Sherbrooke equipment has been installed to considerable extent in multi-stage bleach plant, where linings are by Homad.



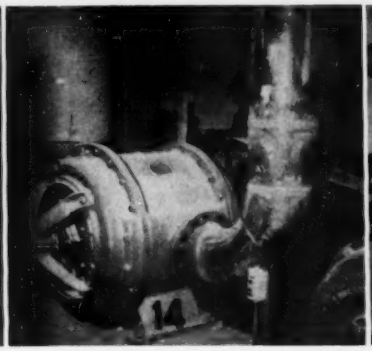
11—ONE OF SCORES OF BUFFALO pumps at Columbia Cellulose Mill. This one is in water filtration plant. Buffalo pumps are supplied through Canada Pumps, Ltd.



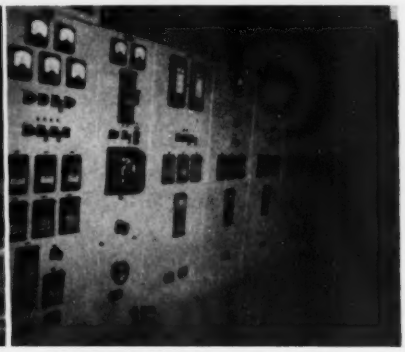
12—CARBINE TURBINE CO. BLOWER is one of interesting installations in boiler house, manufactured by Carbine Turbine Co., Worcester, Mass.



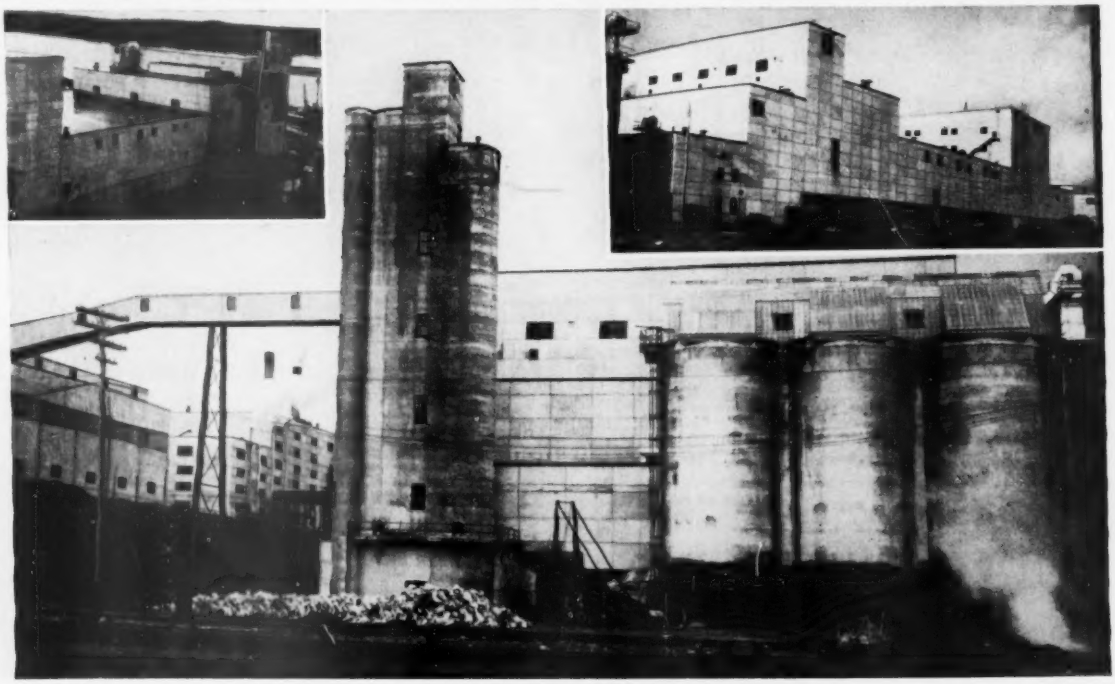
13—ALLIS-CHALMERS FEED WATER PUMPS in boiler house of Columbia Cellulose Co.'s mill at Watson Island, B.C. Panel board is in background.



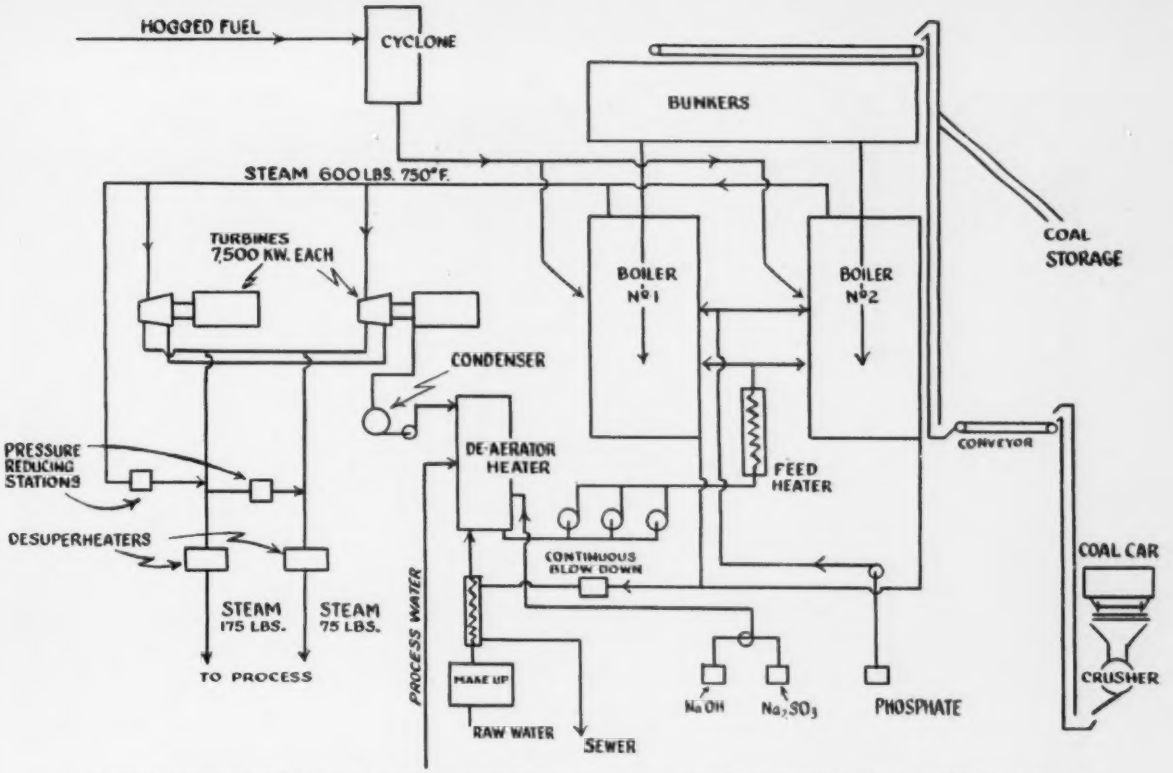
14—NASH ENGINEERING CORP. VACUUM PUMP with English Electric Co. motor at Columbia Cellulose Co.'s pulp mill, serves pulp drying machine.



15—GENERAL ELECTRIC SWITCH PANEL system controls generation of power in steam plant at 6900 volts and to each separate operating department.



AT COLUMBIA CELLULOSE'S HIGH ALPHA PULP MILL, larger picture here shows *JENSSEN Acid Tower structure including two limestone towers with* skip hoist for handling limestone, also main lift elevator designed and completely erected by G. D. Jenssen Co. Inc., Watertown, N. Y. Three sulfur *silos are at lower right. INSET-UPPER LEFT—Looking down on Screen Room,* Bleach Plant and Digester Bldg., from top of Chip Storage Bldg. INSET—UPPER RIGHT—Under single roof are shown (l to r): Sulfur Burner, Acid Recovery, Digester House, Pulp Washing Section, *Unbleached Screening,* Bleached Screening and part of Pulp Storage Bldg.



FLOW DIAGRAM OF POWER PLANT OF COLUMBIA CELLULOSE CO., LTD. Here are Foster Wheeler 250,000 lbs. per hr. (each) boilers equipped with economizers, superheaters, spreader stokers, chain grates, central controls, fly ash eliminators and ash removal.

Because it is necessary to maintain absolute control of the quality of the final product for the acetate process it is necessary to test each jumbo roll and store them during the testing time involved.

Complete Pilot Plant

This testing requirement involved construction and operation of a complete pilot plant in the mill building, under the control of the technical supervisor and operated by a separate staff. In this plant, 100 x 50 x 30 ft., provision has been made for all basic pulping processes—acid treatment, cooking, digesting, washing and bleaching, and it is at all times available for experimental work and for testing samples of regular production.

Columbia Cellulose Co. at this stage does not bale its pulp, but reels up the full width sheet into jumbo roll storage where the rolls are identified, tested, classified and reclaimed in pulp finishing machines. The product leaves the mill either in bales or rolls when intended for the textile yarn and plastics plants of the parent company, and presumably most of it will have the latter destination for the first few months.

Bulkley, Dunton Pulp Co., Inc., is selling agency for the Columbia Cellulose market pulp.

Pulp in Rolls and Bales

When the pulp leaves the mill in rolls, the latter are split into the smaller size rolls required, wound on standard cores, wrapped, headed, weighed, marked and taken away by a Mathews Conveyor automatic machine to a stacker lowerator. The woodpulp which is produced for paper process or any dissolving pulp sold in the form of bales will be cut on a Lamb-Grays Harbor air flow conveyor mechanism. The bale is then tied on a layboy and cutter and automatically conveyed over a scale to Hydraulic Machinery Co.'s Montreal 830-ton capacity hydraulic press. Extraction from the press is automatically accomplished by a Lamb-Grays Harbor air flow conveyor mechanism. Afterwards the bale is tied on an Embree tying table. The bale is again identified and transported by the same automatic conveyor as the rolls and transferred by a stacker lowerator to the handling floor of the main warehouse. Lift trucks carry rolls or bales to railroad cars or to a warehouse with a capacity of 10,000 tons.

When the pipeline already described reaches the mill, the water is given a preliminary screening through North wire mesh filters. Filtered water is pumped to precipitator floculator equipment to serve as boiler feed makeup and hydraulic barker supply.

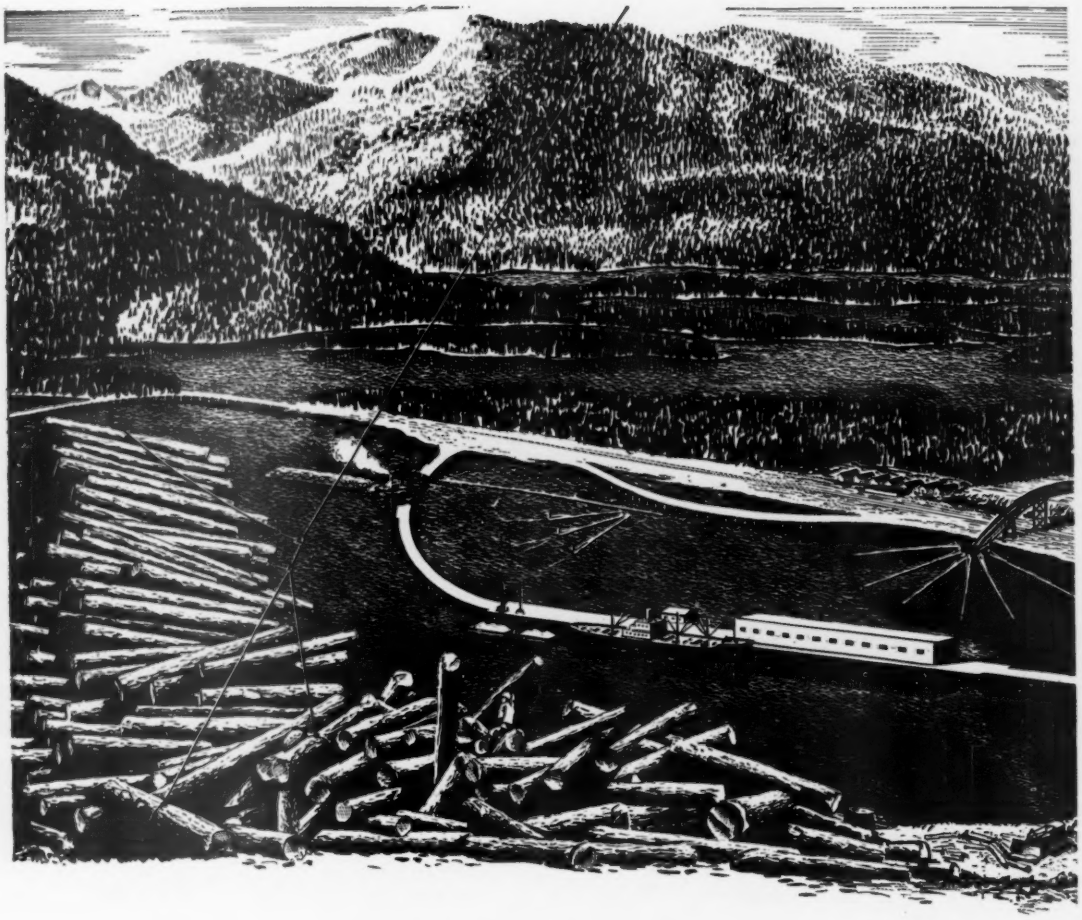
Filtration System Described

Chemicals for water treatment are received in bulk, conveyed to three silos and fed automatically into the mixing flumes ahead of the precipitator. Floculator and precipitators work on the principle of slow agitation for floc agglomerization and the formation of a sludge blanket in the upgoing passages of the precipitator. This blanket is set at a predetermined height by the extraction of a sample of water at that height and passing it over photo-electric cells which, by the opacity of the withdrawn sample, automatically controls the increase or decrease of the sludge extraction. The same controls automatically allow the back flushing of the sludge extraction mechanism on a pre-set scale.

From the top of the diverging channels the clarified water overflows to a concrete launder which supplies the eight 32x22 ft. rapid sand filters. The sand filters are rated conservatively at two gals. per sq. ft. per min. The filtrate is collected in the gravel bed by porcelain collectors and is conducted away to a clear well from which water is pumped by three 6000 g.p.m. Allis-Chalmers pumps. Water is also extracted from this clear well and pumped to the condenser in the power plant and the water from the condenser returns to the clear well. All valves surrounding the filters are controlled from the operating floor.

Green Bay Foundry of Green Bay, Wis., supplied the filtration plant rotary filter screens. The incoming water is admitted by manually controlled valves from a concrete header, also used as an operating platform. Because of the gener-

(Continued on Page 58)



"Farming" the Forests of the Canadian

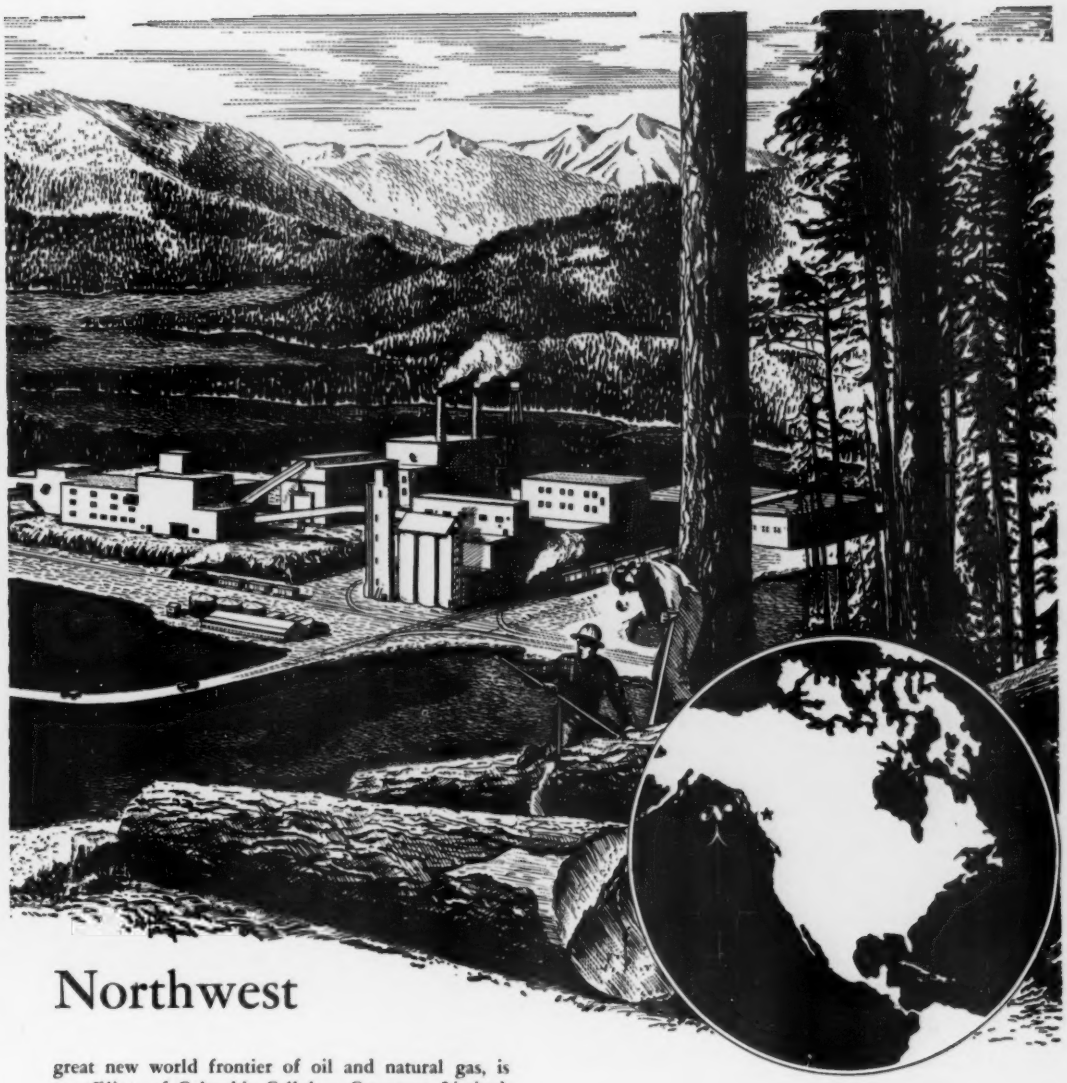
One of the basic raw materials vital to defense mobilization and military preparedness is purified cellulose, obtained from spruce and hemlock high-grade wood pulp. It is also a key raw material used in the manufacture of modern chemical textile yarns and plastics.

In an effort to assure an expanded and continuous supply of cellulose, Columbia Cellulose Company, Limited was organized to pioneer an advanced project of "forest farming" in the Prince Rupert area of British Columbia, Canada. Forest Management License No. 1 was granted to the Company by the Province of British Columbia. Under this license, Columbia Cellulose and Provincial authorities have instituted a program of scientific logging and planned reforestation.

The orderly cutting and re-seeding of timber as a slow-growing farm crop, provides full utilization of natural resources, at the same time maintaining their productive capacity. This is conservation at its highest level.

The location of the new pulp plant at Prince Rupert, close to the forest areas, enables it to convert the timber into pulp with maximum efficiency. This mill provides a new and substantial source of high quality cellulose which will help relieve the present world-wide scarcity of wood pulp.

Operations of the Prince Rupert plant will contribute directly to the projected chemical plant operations of the newly organized Canadian Chemical Company, Limited in Alberta. This company, adjacent to the



Northwest

great new world frontier of oil and natural gas, is an affiliate of Columbia Cellulose Company, Limited. Acetic acid from this plant will be combined with wood pulp from the Prince Rupert plant to produce cellulose acetate, the primary material used in the manufacture of acetate textile yarns and plastics

These developments are an indication of the vast industrial growth taking place in Western Canada and the contribution it will make in securing the position of the entire Western World.

The planning behind an enterprise of this scope requires not only foresight and sound business judgment, but confidence as well. It is this kind of long-term planning that is responsible for Canada's great and growing industrial strength.

Columbia

CELLULOSE COMPANY, LIMITED

PRINCE RUPERT, B. C.

ous capacity of the screens all operation in the department is manual. Water and solids are screened through stainless steel plain-weave wire, placed on the drums in 14 sections each so that only part of the wire has to be removed in case of a tear or rupture. The solids in intake are picked up by lift paddles and deposited into troughs within the rotating drums. The screenings are discharged into another trough at the rear of the screens, subsequently leading into the plant sewer system. The rotating screened drums are continuously washed.

Equipment for Steam Plant

The steam plant consists of two Foster Wheeler units with a continuous rating of 180,000 lbs. of steam per hour with a four-hour rating of 250,000 lbs. of steam per hour each. The steam is generated at 600 lbs. pressure 750 degrees F, and is taken by the steam main to either of two turbines or to the pressure reducing stations. The two Worthington turbines have capacity of 7500 kw. One is totally extracting at 175 lbs. pressure, and at 75 lbs. pressure; the other extracts at 175 lbs. pressure, with the exhaust going to a condenser. Pressure reducing stations supply steam when needed by process when this is not provided by the turbine extractions. These stations reduce from 600 down to 175 down to 75. The resultant superheat is eliminated by controlled injection into the low pressure steam lines. The generators have integral exciters. One turbine driven emergency exciter is provided.

Generation of power is at 6900 volts and distribution is at the same voltage through a General Electric switch panel system through to the various step down and distribution stations in each operating department. Transformers from 6900 volts to 550 volts are air-cooled fluidless type.

In the boiler house the fuel used is from Bulkley Valley Collieries, Ltd., at Telkwa, some 250 miles east on the Canadian National. Coal is received in run-of-mine size, crushed, screened and conveyed away over Jeffrey equipment to either the hoppers or outside to the pile storage. Reclaiming of coal from the pile storage to the uptaking conveyer elevator boot is accomplished by bulldozers. Coal is burned through spreader stokers and chain grate stokers supplied by Foster Wheeler. Over the main fuel bed the sawdust and bark which have been dewatered in the wood room by a Squier bark press and disintegrated by Jeffrey hogs are burned in suspension rather than in dutch ovens. The Nuveyor Co. supplied pneumatic extraction of ash and dust, accumulated in outside tile storage and transported away by truck for filling.

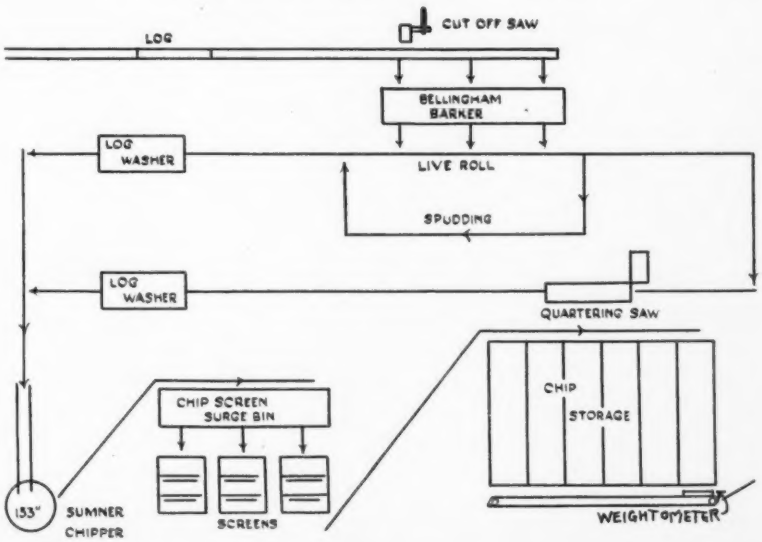
The mill employs about 300 men in equipped machine shop, carpenter shop and electrical repair shop, although facilities of nearby Prince Rupert Drydock will be called upon for some major repair jobs.

The mill has its up-to-date and well

COLUMBIA CELLULOSE CO., LTD., EQUIPMENT AND CONTRACTORS

Structural steel cranes, digesters, walkways, etc.	Dominion Bridge Co., Vancouver, B.C., and Montreal
Excavation for buildings	B.C. Bridge & Dredging Co., Vancouver, B.C.
Pipeline and construction	Campbell-Bennett, Ltd., Vancouver
Wall panels, roof slabs	Creaghan & Archibald, Montreal
Log haul structural steel	Vancouver Engineering Co., Vancouver
Log haul castings and refuse conveyer	Electric Steel Foundry (Esco), Portland and Vancouver
Log haul drive	United Steel Corp., Hamilton Gear & Machine Co., Toronto
Wood room equipment, including chipper and barker	Sumner Iron Works, Everett and Vancouver
Saws	Spear & Jackson, Vancouver; Simonds Saw & Steel Co., Fitchburg, Mass.
Chip screens	Thos. Dillon & Co., Toronto
Bark press	Squier Corp., Buffalo
Chip storage and extractors	Stadler, Hurter & Co., Montreal and New York
Chip and fuel conveyers	Jeffrey Manufacturing Co., Montreal
Digester circulating and hot acid systems	Chemipulp Process, Inc., Watertown, N. Y.
Raw acid system	G. D. Jenssen Co., Inc., Watertown, N. Y.
Acid plant steel works	Hydraulic Supply Mfg. Co., Seattle
Protective linings	Canadian Stebbins Eng. & Mfg. Co., Ltd., Montreal
Linings for vacuum filters, bleach plant installations	Homad Services, Montreal
Jonsson Knotters, Condenser, Compressor	Canadian Ingersoll Rand Co., Montreal
Washing and bleach washers, deckers, etc.	Sherbrooke Machineries, Montreal
Flat screens	Waterous, Ltd., Brantford, Ont.
Screen plates	Union Screen Plate Co. of Canada, Montreal
Kamyr-Flakt drying machines, rotary screens	Paper Machinery, Ltd., Montreal
Pulp handling equipment	Mathews Conveyor Co., Port Hope, Ont.
Layboy and cutter	Lamb-Grays Harbor Co., Hoquiam, Wash.
Boilers	Foster Wheeler Co., New York and St. Catharines, Ont.
Electrical installations	B.C. Bridge Electrical Co., Vancouver
Feed Water Pumps	Allis-Chalmers Mfg. Co., Milwaukee
Main Switch Gear, Barker Pump Motor	Canadian General Electric Co., Toronto
Unit Sub-Stations	Westinghouse Electric Co.
Filtration Plant	Permutit Co., New York
Water Filter Screens	Green Bay Foundry & Machine Co., Green Bay, Wis.
Electric Motors	English Electric Co., Toronto
Barker and Chipper Motors	Electric Machinery Mfg. Co., Minneapolis
Pumps, (General), fans	Canadian Blower & Forge, Kitchener, Ont., Buffalo Forge Co., Buffalo, N. Y.
Barker Pump	Bingham Pump Co., Portland, Ore.
Vacuum Pumps	Nash Engineering Co., South Norwalk, Conn.
Bauer Refiners	John Inglis Co., Toronto, Bauer Bros., Springfield, Ohio
Instrumentation, Process	Foxboro (Peacock Bros.), Montreal
Instruments including Temperature Control, Pyrometers	Minneapolis-Honeywell Regulator Co., Brown Instrument Div., Philadelphia
Caustic Tanks	Sparling-Davis, Montreal
Raw Acid Tanks, Accumulators	Horton Steel Works, Fort Erie, Ont.
Wet Machine	Port Arthur Shipbuilding, Port Arthur, Ont.
Pulp Press	Hydraulic Machinery Co., Montreal
Elliott Deaerrator	Elliott Co., Jeannette, Pa.
Trucks	International Harvester Co., Chicago
Scales	Fairbanks-Morse Co., Chicago
Freight Elevators	Vancouver Engineering Co., Vancouver
Woodstave Pipe	Canadian Wood Pipe & Tanks, Vancouver

WOOD ROOM LAYOUT OF COLUMBIA CELLULOSE CO., LTD.



Congratulations!

to

COLUMBIA CELLULOSE COMPANY, LTD.

on the occasion of

opening their

new Mill for

Purified Wood Cellulose

at Prince Rupert, B. C.

Selling Agent

BULKLEY, DUNTON PULP CO., INC.

295 Madison Avenue, New York 17, N. Y.

full operation, in addition to double that number in the Woods Division.

The company has not built any housing for regular employes and probably will not. Prince Rupert's housing facilities present and planned will be ample. However, the government has re-surveyed an excellent building site at Port Edward, a center of the fishing industry, about half a mile from the mill, and it is expected many employes will buy lots and build homes there. The government is hardsurfacing the ten-mile road to the mill from Prince Rupert.

BIGGEST ACETATE RAYON PRODUCER

It was typical of the scientific and administrative thoroughness of Celanese Corp. of America that systematic tests were made well in advance of the Watson Island project to determine whether the softwoods available in British Columbia could be satisfactorily used and, if so, by what process, to produce the necessary high quality pulp demanded by the company's converting plants.

An extensive research program was undertaken at the Celanese Corp.'s plant at Cumberland, Md., to assure that the design and functioning of the west coast mill would be logical and effective.

Celanese Corp. is by far the largest world producer of acetate rayon which in 1950 approximated 430,000,000 lbs. in the United States alone. It is estimated the company produced well over half that total, with Tennessee Eastman, duPont and American Viscose accounting for the balance.

Although its roots are deep in chemistry, Celanese has drawn the largest share of its sales dollar from the textile industry. But the company is not a producer of chemical fibers exclusively. It is also one of the foremost manufacturers of cellulose acetate plastics and an increasingly important producer of synthetic chemicals.

The acetate process produces rayon by treating purified wood pulp or cotton linters with acetic anhydride, glacial acetic acid and a catalyst, thus producing a primary solution of cellulose acetate. The solution is then hydrolized and precipitated into a white, flocculent mass, which is washed clean of acid and emerges as a cellulose acetate flake.

Flake thus produced may be converted into textile yarn, molding powder compounds for use in thermoplastic molding, or into plastic sheets, rods, tubes and film. In the manufacture of acetate yarn, the cellulose acetate is dissolved in acetone to form a spinning solution. Acetate spinning consists of metering the spinning solution through the holes of a spinneret into a current of warm air, thus solidifying the filaments by evaporating the acetone. At this stage the acetate rayon is ready for textile use.

Acetate yarn has different chemical and physical properties than other rayon yarns. Acetate staple fiber is made by collecting continuous filaments into a "tow" from a number of spinning chambers and feeding into a cutter.

Under normal market conditions, the Watson Island mill might produce a whole range of pulps from unbleached sulfite to acetate grades. Although at present called upon to produce only acetate pulp, the general layout and equipment are sufficiently flexible to give a widely diversified field, and it is conceivable that some day kraft grades may be added to the mill's products.

Columbia Cellulose Co.'s initial production of more than 200 tons of high alpha cellulose daily will be equivalent to about 18% of the total woodpulp consumption of the U. S. rayon industry last year.

Dissolving pulp production by Columbia Cellulose at this time is of strategic military importance because of the increasingly short supply of cellulose in the form of linters and purified woodpulp.

DISSOLVING PULP MARKET

By Rex Vincent

(This article appraised a market which will be tremendously influenced by the opening of the new subsidiary Celanese mill in Canada, described in this issue.)

It should no longer be regarded as odd to speak of woodpulp intended for dresses, men's suitings, carpets and drapes. Not too many years ago this field of woodpulp production was very narrow and was referred to as only a fraction of the total production of woodpulp. This latter statement is still applicable but only when one refers to the "total production" of woodpulp. If this is narrowed down to production of bleached sulfite for papermaking for market, a startling set of figures emerges:

Year	U.S. Production-Bleached Sulfite for Paper for Market	Production-Dissolving Pulp
1948	438,196 tons	421,924 tons
1949	449,384 tons	371,422 tons
1950	490,000 tons (est.)	473,210 tons

Inasmuch as a great deal of the dissolving pulp used in the U.S. comes from Canada, perhaps a more appropriate comparison would be these figures for North America:

Year	North American Production-Bleached Sulfite for Paper for Market	North American Production-Dissolving Pulp
1948	571,803 tons	754,000 tons
1949	514,000 tons	620,930 tons
1950	695,000 tons (est.)	796,312 tons

Over the past three years there have been several expansions in the production of this grade of pulp, the full effects of which have not yet been felt, and when they are, the figures given in the tables above will demonstrate that dissolving pulps are being produced in North America to a greater extent than is bleached sulfite for papermaking for market mills.

In spite of these expansions it is not certain yet whether the demand will be satisfied and this demand results in turn from demand for textiles so that it is difficult to discuss these pulps from a supply-demand viewpoint without ultimately getting into a discussion of the demand for textiles. For the past decade consumption of cotton, wool and man-made fibers has been increasing, but the consumption of man-made fibers has increased more rapidly than either cotton or wool. Part of this has been due to the more desirable characteristics resulting from use of highly controlled chemical fibers and part to cotton and wool pricing themselves out of certain uses. Technological advances in the production of viscose and acetate rayon yarns have now rendered them suitable for men's suitings and even rugs and carpets. As new fields of use are opened up, particularly in the use of stable fiber, consumption increases.

A Record Year in 1950

The year 1950 saw more dissolving pulp produced in the U.S. and Canada than any year so far, but this was not enough to satisfy demands. Last year 456,200 tons were consumed—77.2% of the cellulose consumed by the rayon industry. The balance was made up by cotton linter pulp. In 1949 the woodpulp consumed was 358,700 tons and the cotton linter pulp amounted to 117,900 tons.

A guide to future consumption is the capacity of the various plants for the production of rayon yarns. It was estimated that the capacity in Nov., 1948, was 581,000 tons and by the end of 1951 will be at least 690,000 tons. This, of course, refers to capacity for the production of yarn and not the capacity for the consumption of pulp. Rayon, either viscose or acetate, is not the only consumer of purified woodpulp, although the largest.

Cellophane is next largest. By the end of 1951, cellophane capacity will reach about 178,000 tons of finished product. Also consuming this pulp are manufacturers of plastic molding powders, transparent sheeting, photographic film, paints, lacquers, and many special papers.

Supply and Demand

The table below summarizes the supply-demand aspects of dissolving pulp on the basis of North America. It is important that it be understood that these statistics cover all grades. This includes pulp which is manufactured for rayon, cellophane, plastics, etc. It is important to understand the supply figures are based on production capacities, and total capacity is seldom reached. Further, it must be noted that with respect to the acetate grade of woodpulp there are only two producers who have for several years been unable to

Congratulations

TO

COLUMBIA CELLULOSE CO., LTD.

On the completion of their

Wonderful Accomplishment

We are proud of our Participation:

Two 8 x 16 Sulphite Brown Stock Washers

Six 8 x 16 Bleach Washers

Four 8 x 12 Vacuum Deckers

Complete Mechanical Bleaching Equipment

Askania Thin Stock Controls

SHERBROOKE MACHINERIES LTD.

SHERBROOKE, QUEBEC

meet the demand for this highly purified grade. Special requirements on various types of these pulps in end use have caused critical shortages in certain areas where others seem to be receiving an ample supply.

These figures are as accurate as they can be, but can be misleading if not clearly understood. The figure for exports is almost at a ridiculous minimum. World demand is so great that the export figure could easily be doubled.

Estimated Supply—All Grades Dissolving Pulps

	Tons
North American capacity	800,000
Additions (annual basis during 1951)	205,000
North American capacity—1952	1,005,000
Estimated linter supply	145,000
Total purified cellulose—1952 (annual basis)	1,150,000

Indicated Demand—All Grades Dissolving Pulps

	Tons
Rayon (all types)	650,000
Cellophane	178,000
Paper, film, plastics, etc.	132,000
Canadian rayon	21,000
Exports	80,000
Total	1,061,000
Excess, supply over demand	99,000

The figure of 99,000 tons for the excess of supply over demand must not be considered as a cold figure representing surplus. The rebuilding of inventories which are almost non-existent could absorb most of this quantity, and if this quantity was actually available and there was no demand for it in North America, other nations in the world would gobble it up hungrily. The supply figure could very well be a little on the high side inasmuch as one important producer might not operate his mill on the basis of 100% dissolving pulp.

THE MEN BEHIND THE MILL

High-level planning and policy-making for Columbia Cellulose Co., Ltd., from the initiation of the project have been in the capable hands of the principal officers of the company's affiliate—Celanese Corp. of America.

Dr. Camille Dreyfus and Harold Blancke, chairman of the board and president, respectively, of the parent Celanese organization, hold the same positions with Columbia Cellulose. George Schneider, senior vice president; George H. Richards,* vice president and treasurer; Charles F. Beran and Fred T. Small, vice presidents, all of Celanese, are also vice presidents of Columbia Cellulose.

Co-ordinator of the whole Columbia Cellulose operation is Dr. Ralph H. Ball, in his capacity as manager of the cellulose division of Celanese Corp. of America. A graduate of the University of British Columbia and possessor of a Ph.D. degree from McGill in Montreal, Dr. Ball was previously engaged in research management for the American affiliate and he wrote an article on cellulose plastics featured in PULP & PAPER several years ago.

Acting as West Coast consultant of Columbia Cellulose Co. since its earliest organizational stages has been D. G. Stenstrom at offices in Vancouver. Mr. Stenstrom, formerly resident manager for Pacific Mills, Ocean Falls, B.C., has served the pulp and paper industry in Australia and been consultant to several companies.

Mill manager of Columbia Cellulose Co. is W. C. R. Jones, many years prominent in the industry in eastern Canada. His early experience was with the Canadian International Paper Co. at Gatineau, Que., and the Wayagamack division of Consolidated Paper Corp. at Three Rivers, Que. In 1937 he went to Australia to assist in design and operation of the first chemical woodpulp mill "down under," at Marysvale. Three years later he was back in Canada, joining Howard Smith Paper Mills. For several years he was assistant manager of the Beauharnois division.

Every man on Mr. Jones' staff was handpicked because of qualifications for the job at Watson Island. D. D. Carr-Harris is plant engineer. Ontario born, he was with Anglo-Canadian Pulp & Paper Mills in Quebec many years. During World War II he was a wing commander with the Royal Canadian Air Force in charge of bomber maintenance. M. E. Bartlett is assistant plant engineer.

Mervin E. Martin, technical supervisor, has been in charge of cellulose research at the Celanese plant in Cumberland, Md. During the past five years he concentrated on development of processes for the new mill. Dr. D. L. Sherk, also from Cumberland, is chief chemist.

Another man with practical experience at Cumberland is Roy O. Evans, who has joined Columbia Cellulose as operating superintendent. Mr. Evans served in Quebec with Price Brothers & Co.'s Jonquiere mill, with Bathurst Power & Paper Co. and three years ago was employed by Celanese Corp. so that he might familiarize himself with processes for the new mill.

R. S. Baker was the company's principal consultant from the inception of the project until his death in Jan., 1950. He contributed greatly to the overall planning, to the selection of methods and equipment, and to the supervision of design.

Layout and equipment of log haul and wood room were based largely on work of W. H. Rambo, consulting engineer of Portland, Ore., specialist in Pacific Coast wood room design.

Engineering of the mill and auxiliaries was under supervision of the Central Engineering Department of Celanese Corp., directed by the chief engineer, S. B. Roberts, and supervised and co-ordinated by H. M. Wilgus and B. Sola. The engineering was started in Montreal in 1947 by Stadler, Hurter & Co. Subsequently, log haul, wood room and chip conveyors were separated from the main job and were engineered by Surveyor, Nenninger & Chenevert, consulting engineers of Montreal. In May, 1949, the balance of the engineering was transferred from Stadler, Hurter & Co. to the Central Engineering Department of Celanese in New York, where it was completed

The "man on the ground" at Watson Island during construction had been C. H. Klotz, project engineer. Jim Macri, who helped build other Celanese plants in the U. S. and Mexico, served as construction superintendent. Co-ordinators of design were Messrs. Wilgus and Sola, and group leaders on construction were: R. M. Sandford, acid plant, digester and screen room design; T. M. Andrews, filter plant and services; M. L. Grossman, steam and power; F. E. Hansen, wood room and chip storage; E. A. Bayers, structural steel; R. A. Fuhrer, electrical design.

Other key members of the operating staff at Watson Island include L. Louchs, chief electrician; B. Ingram, master mechanic; C. Morrison, chief stationary engineer; Gunnar Selvig, wood room and yard foreman; Jack Cross, lime quarry foreman; D. Doswell, personnel supervisor.

Head of the woods division, operating under a British Columbia forest license for 1,000 sq. mi., is Rae L. Johnson, former chief engineer for Weyerhaeuser's Longview, Wash., woods division.

CHARLES W. CARD (left), has been appointed a Vice President and Director of Coos Bay Pulp Corp., western operations of Scott and its new Plant Manager at Anacortes, Wash.

LEO GEISER (right), has been named Director of Production, with staff supervision over all pulp, paper, board and finishing, at Champion Paper & Fibre Mills in Hamilton, O., Canton, N.C., and Houston, Tex.

Mr. Card has been a resident of Bellingham, Wash., some time, sent out by Scott as personnel executive for the nearby Anacortes mill. Jesse R. Lewis will continue as Manager of Operations at Anacortes.

Mr. Geiser started in the Hamilton coating mill 29 years ago, advancing to Supt. of Mill No. 1 and recently Gen. Supt., Mill Mgr. and finally, Hamilton Div. Mgr. in 1949.

J. D. "Jack" Jenssen Dies at Age of 74

Jacob Darre Jenssen, co-founder with his brother, G. D., of G. D. Jenssen Co., and designer of many pulp mill installations in Europe and North America, passed away at St. Luke's Hospital in New York, April 16, after an extended illness.

Mr. Jenssen was born at Trondheim, Norway, on June 9, 1876. He came to the U.S. in 1900 and engaged in design with several mill consultants. He was with Hardy S. Ferguson, Millinocket, Maine, until 1905 when he returned to Europe. He was engaged by Hungarian interests for several months and then transferred to Koenigsberg, Germany, with the Nordeutsche Cellulosefabrik.

In 1909, he returned to North America as chief engineer for the Riordan Co., Hawkesbury, Ont. In 1915, with his brother, Gunnar D., he founded G. D. Jenssen Co. Mr. Jenssen introduced the reversible two-tower system of sulfite acid making. Many mechanical developments are attributed to him, particularly in the field of acid making. He designed several pulp mills and contributed process improvements in many mills.

The Jenssen company was incorporated in 1944, with Mr. Jenssen as president. In 1949, Mr. Jenssen relinquished his official capacity as an officer to remain as technical consultant and advisor. F. J. Hoar is now president.

Infilco Names Cecil Vice President

Directors of Infilco, Inc., have elected Lawrence K. Cecil vice president. Mr. Cecil has been general sales manager since Aug., 1950, and with Infilco for 25 years as sales engineer and district manager.

Infilco, a leading designer of water treatment plants, recently moved its headquarters to Tucson, Ariz., from Chicago.

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NORTMANN-DUFFKE COMPANY	Perforated Plates—any alloy
SHENANGO-PENN MOLD COMPANY	Centrifugal Castings; Sleeves; Roll Shells
SUTHERLAND REFINER CORPORATION	Refining & Pressure Washing Equipment
TORK-MASTER COMPANY	MacBain Valves & Automatic Valve Controls
SAMUEL C. ROGERS & COMPANY	Knife and Saw Grinders
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ORDERS FOR MICHIGAN MILLS

MILL MANAGERS TESTIFY ON DEINK POLLUTION

WITNESSES (l to r) and what they said:
FRED GOODWILL: "St. Regis would feel it necessary to cease operations."
DWIGHT STOCKER: "We suggest full scale plant trial."
A. E. SHERWOOD: "We've been at it 12 years."

Final order forms were being issued in May to Kalamazoo Valley paper mills calling for "reduction of pollution of the Kalamazoo river." This action by the State of Michigan Water Resources Commission followed statutory hearings held in Lansing. Ten companies presented their cases in answer to the previously issued Notice of Determination that called for initiation of a program for virtual elimination of the waste going into the river from the deinking operations in the area.

One big change in the final form over the notice is the "providing an additional year, both for submission and compliance." This means plans must be submitted to the commission by April 1, 1953, and requires compliance by June 1, 1954.

These are owners of 14 mills involved: St. Regis Paper Co. (ex-Bryant mill only); Allied Paper Mills (Monarch and King Div.); Michigan Paper Co. of Plainwell; Rex Paper Co.; Hawthorne Paper Co.; National Gypsum Co.; Sutherland Paper Co. (Mills 1, 4, 7); Otsego Falls Paper Mills; Mac Sim Bar Paper Co.; and Kalamazoo Vegetable Parchment Co. (Mills 1, 2).

This action does not involve the pulp mills. The commission used the terminology "at the present time," which could indicate later involvement of pulp mills.

The issues involved in eliminating waste from deinking now are:

Can the mills afford it? Is the commission hasty in issuing a final order when the right system for elimination is so uncertain? Will mills become economically unable to compete with mills in other regions.

St. Regis May Close

Fred C. Goodwill, division manager for St. Regis, stated: "I was instructed to state that if those requirements remained firm and compliance was insisted upon that—regrettable as it might be—the company would feel it necessary to close the plant. My company has investigated the cost."

All those appearing for the mills touched on the large-scale waste treatment plant that is being tried under joint support of these mills and located at the Michigan Paper Co. at Plainwell. The mills feel that they entered into this research in good faith to find a solution and should be able to continue with this experiment until actual results and cost can be obtained. They pointed out this plant has not operated through a full one-year cycle; that it should be so operated to determine if abatement by primary settling and aeration is feasible.

Final Order for Mills

Requires the removal from Kalamazoo River of "abnormal burden" of sludge-forming solids and to reduce BOD. Deadline for plans, and for compliance has been April 1, 1953; for compliance, June 1, 1954, respectively. A suitable national emergency clause is to be included. Ten pounds of solids per ton of product from paper process water effluent was set for all.

The following table shows requirements and classifications set for the mills:

	Daily use of Waters (in lbs. of 5-day biochemical oxygen demand)	*Lbs. of Suspended Solids*
Kalamazoo Paper Co.	13,600	78,300
Michigan Paper Co.	4,200	34,300
Rex Paper Co.	2,700	10,300
Allied Mills (King)	16,300	53,700
Allied Mills (Monarch)	10,000	31,900
Hawthorne Paper Co.	1,900	6,900
National Gypsum Co.	3,100	3,900
Sutherland—		
(Div. 1, 2 & 3)	1,000	1,900
(Div. 7)	800	5,600
(Div. 4)	3,500	20,400
St. Regis Paper Co.	11,100	76,500
Otsego Falls Paper Co.	19,100	5,200
Mac Sim Bar Paper Co.	5,400	15,700
KVP No. 1 Mill	600	4,800
KVP No. 2 Mill	3,800	16,900

Ernest J. Gilman, assistant production manager, Allied Paper Mills, assisted by comments from William Kirkpatrick, technical director, touched on many key points generally concurred in by other mill men. He said, "The order would cause the mills to spend large amounts of money to accumulate staggering quantities of wet sludge. How to dispose of this sludge is an unsolved problem. Immediate areas would soon be filled. Long distance pumping and trucking are prohibitive. Air pollution from large deposits is probable." He did not feel the waste in the Kalamazoo river is injurious to health or industry.

"We anticipate an initial expense for construction of $200,000 for both Allied mills. On a much smaller scale the experimental plant is costing about $500 to $600 per month (to operate). We estimate in its wet state the sludge for our mills might run in the neighborhood of a million pounds per day."

On costs, Mr. Goodwill estimated that for a plant turning out 150 tons of deinked pulp per day, it will cost something over $200,000, not including filters and vacuum filters, which would add another $60,000 and the operation cost would be $25,000 per year. "This does not include trucking of the sludge," he said.

The testimony at the hearing touched on many allied factors: The history of the mills; what they mean to the community; the fact that they can't afford to buy virgin pulp. Deinked stock is the lifeblood of this group.

James A. Wise, vice president, and Frederick Curtenius, secretary-treasurer, of Kalamazoo Paper Co. both appeared. Mr. Wise pointed out that deinking is a tremendous contributor to conservation of forests. He interpreted the 10 pounds of suspended solids per ton of product into the operation of a paper machine as meaning that any excess of white water shall not contain more than 10 pounds. He questioned that in the production of book papers this could be attained.

Dwight Stocker (in picture), president of Michigan Paper Co. of Plainwell, stated: "Our approach is not just one where we say 'don't issue that order.' We would like to suggest a full scale test period this year (for the treatment plant); that an order restricting the deinking industry would be harmful to national economy and even more so in time of shortage; that an overall order covering white water cannot be applied to all types of mills, and that this commission adopt the policy of careful mill to mill solution."

A. E. Sherwood, technical director, Sutherland Paper Co., reported on new save-alls that had been installed, the problem with sewer hookups, waste from sweeping that couldn't be put back into the system. He explained that it isn't just the cost of save-alls. The physical plant won't allow installations of these save-alls on two machines. Space was provided in the new mill for moving one of these old machines, but the $2 million cost was prohibitive. And the other machine can't be shut down on account of demand.

Five pounds per ton of product, originally set for Sutherland and National Gypsum, was equalized with the other mills to ten pounds.

For National Gypsum, F. L. Buchanan, plant manager, questioned practicability of the plans.

Frank Libby, manager of paper manufacturing, KVP, said: "Our program will involve new machinery and changes we could not complete until June 1953."

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MALCOLM J. OTIS, Resident Manager, Crown Zellerbach Corp., West Linn, Ore.

R. S. WERTHEIMER, Vice Pres. and Res. Mgr., Longview Fibre Co., Longview, Wash.

RAY E. BAKER, Mills Mgr. at Longview, Wash., Pulp Div., Weyerhaeuser Tmbr. Co.

MAX R. OBERDORFER, Executive Vice Pres. and Gen. Mgr., St. Helens Pulp & Paper Co., St. Helens, Ore.

SAM J. ROBINSON, Vice Pres. and Gen. Mgr., Publishers' Paper Co., Oregon City, Ore.

GEORGE MILLER, Resident Manager, Columbia River Paper Mills, Vancouver, Wash.

THESE MILL MANAGERS IN PORTLAND AREA, as well as other more distant, proffer greetings to Superintendents National Convention—and extend cordial invitations to delegates to visit their mills. All other Coast mills—at greater distances from the Convention City—also have advised PULP & PAPER that their welcome mats are spread for the delegates. Elsewhere we publish names of mills, persons to contact before making visits, phone numbers, etc.

WHAT DELEGATES WILL SEE ON SCHEDULED TOURS

During National Convention of Superintendents in Portland, Ore.—Trips on June 26

What They Will See at Weyerhaeuser

Weyerhaeuser Timber Co., Longview, Wash., is an outstanding example of wood utilization and integration. Here are three large sawmills, plywood plant, bark products plant, forest products development center, pulp research laboratory, kraft mill and sulfite mill, and a new kraft mill addition under construction, all spreading over 600 acres on the Columbia.

In the fall of 1948 the bleached 275-ton sulfite plant was converted from conventional calcium to the new magnesia base for recovery of heat and chemicals. Under anticipated operating conditions sulfur make-up in the MgO process runs 70 lbs. per ton of pulp, an over-all efficiency of 70%, and magnesia make-up of 18 lbs. per ton, equivalent to recovery efficiency of 88%. In addition to recovery of chemicals, 2350 lbs. of total solids (per ton of air-dry pulp) are available for firing in the recovery furnace. This fuel has average heat value of 6060 BTU. per lb. of solids. When fired at average concentration of 59% solids, it generates 9,000 lbs. steam per ton of air-dry pulp at 620 psi. and 715 degrees F.

The kraft market pulp mill was made possible as result of Weyerhaeuser's "whole timber crop use" policy and application of hydraulic barking at sawmill, making available a large volume of quality leftover dirt-free wood.

As in sulfite, a Rice Barton Minton dryer is in the 200-ton kraft mill. This one is 150-in. wide. There is extensive instrumentation in this kraft mill and four carloads of fabricated stainless steel and large amounts of stainless valves and fittings went into it.

Combustion Engineering made five new welded 40-ft. high draft digesters.

A six-stage batch plant is in this kraft mill.

Equipment for New Mill

The kraft mill now under construction will approximately double the manufacture of bleached kraft board at the Longview operations. This new mill calls for installation of the following equipment:

A Hansel 48-in. ring hydraulic whole log barker will be installed at No. 2 sawmill for barking logs prior to entering mill, and a 42-in. Hansel ring hydraulic barker will be added at the Pulp Division chip plant; a new B & W recovery furnace for recovering 900,000 lbs. of dry solids per day; General American sextuple-effect evaporator of same capacity as existing evaporator; additional Dorr causticizing and liquor clarifying; Bird centrifuge for lime-mud filtering; kiln of same size as present; four stainless-clad digesters and blow tank; three 8 by 16 Impco brown stock washers and knotters; three-stage Impco continuous bleach plant; Noble & Wood continuous beaters; four Jones-Majestic jordans; Beloit 216-in. wire paper machine; two Combustion Engineering 120,000 lbs. steam per hour, 650 lbs. pressure power boilers—one for oil and hog fuel and one, oil only; a 12,500 kw. General Electric turbo generator equipped with double extraction and condensor; Cochrane boiler feedwater treating equipment; and a 15 million gallon per day increase of filter plant capacity.

This mill is to start operation in the first half of 1952.

What Delegates Will See At Camas Mill

Seventeen miles from the Portland convention hotel, north across the Columbia, and then east up the north shore of the great river is this greatest of all Crown Zellerbach plants. Here is one of the most diversified and most highly integrated paper specialty operations in the world. It manufactures sulfite, kraft and groundwood pulp—an 800-ton pulp and a 700-ton paper mill with 87% conversion of its pulp, giving employment to 2,700, earning $10 million dollars annually. The Central Research Department for all Crown operations will be of interest.

The pulp mills include a 6-grinder 60-ton groundwood mill, a 10 digester 380-ton sulfite mill, a 10 digester 385-ton kraft mill, a 180-ton sulfite bleach plant, and a kraft bleach plant of 300-ton capacity.

Until post-war expansion, the paper mill had 13 machines; eight Fourdriniers, two Yankees, two Harpers and a pulp drying machine—in widths of 86 to 188 inches. A 100-in. Fourdrinier Yankee, making facial and other soft tissues, and 152-in. "all-purpose" Fourdrinier, making a wide range from heavy to lightweight specialties, have been added.

A double-trolley traveling crane with two 14-ft. hydraulic grapples at the modern wood preparation plant lifts 60 tons of wood in one swoop to a log deck 50 ft. above the ground. Here, too, is the famed Bellingham-type hydraulic barker which cradles and turns all sizes of logs on toothed wheels. Chip storage silos are of 400 units each. Conveyors extending half a mile.

A modern type Babcock & Wilcox rotating digester, time-cycle pressure control systems operated by a 4-hour clock and devised by the Camas staff, a unique CZ type consistency controller, the first 100-ton high density storage chests in the West features the new kraft mill. A continuous 300-ton kraft bleach plant, up to eight stages, will be of prime interest. It has an intricate list of schedules for varying treatments of different woods and for achieving different color, strength, etc. The new No. 15 Beloit's speed ranges from 150 to 1700 ft. per minute.

The first facial tissue made in the West was made on No. 14 machine. This is a Beloit with 100-inch wire and speeds up to 1700 fpm.

Conversion and finishing have, as integration has been extended, become of great importance at Camas. An amazingly intricate facial folding machine with three decks of parent rolls are among interesting machines.

An elaborate system for dispersing dilute sulfite waste liquor in midstream of the Columbia —where flow is consistently large and rapid— has been in operation since the first of the year. Includes over one-half mile of 30-in., rubber-lined pipe.

A first innovation of its kind in the Far West, a new Oliver-Ahlfors screen in which pulp flows upward through gently vibrating screen plates, was about ready for trial testing. Several applications of Collard's pneumatic-expansible wind shafts (a Camas product) can be observed.

What Delegates Will See At Oregon City

Publishers' Paper Co., with capacity of 275 tons per day on four machines, and pulp capacity of 120 tons unbleached sulfite and over 250 tons of groundwood, has been owned by a group headed by a Los Angeles newspaper publisher about three years. It was Hawley Pulp & Paper Co.

Of 37 grinders, 30 are water-powered. A 234-in. Beloit machine, the plant's largest, runs wholly on news. The other three—a 114-in. Pusey & Jones, 134-in. and 116-in. Beloits—make sulfite colored wrap and other special wrapping, tissue, toilet and specialties as well as news.

Recently a second hydraulic barker was added to process what the West calls "small logs." This Sumner Bellingham-type unit processes three logs 10 ft. long and up to 36 in. diameter, per minute. The large hydraulic barker, a Sumner lathe-type machine, debarks logs up to 22 ft. length and 52 in. diameter, has capacity for 20,000 ft. log scale (equivalent to 40 cords) per hour. Logs going to the large barker are lifted high above the river at up-stream side of barker building by a four-cable electric-powered hoist.

Barked logs for groundwood are converted by a modern 110-in. 6-knife Sumner chipper.

This plant has a new combination hog fuel-oil burning Springfield boiler with capacity of 80,000 lbs. of steam per hour—a re-emphasis of the rising importance of wood by-products in forest industries.

A Reitz disintegrator installed in April refines groundwood screenings, five to six tons daily.

What Delegates Will See At West Linn

The West Linn, Ore., division of Crown Zellerbach Corp., on the west bank of the Willamette, 13 miles south of Portland, has a history dating back over 60 years. It has ten Four-

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drinier paper machines with rated capacities of 290 tons of coated book paper, 120 tons news, 230 tons groundwood specialties, toweling, and miscellaneous printing and wrapping. It makes sulfite and groundwood, and employs 1250 persons.

No. 6 machine, a 165-in. Beloit with a speed up to 1500 ft., makes coated paper for Life and Time, printed at Los Angeles, from whole pages teletyped instantaneously from eastern publication headquarters. No. 5, a 155-in. rebuilt Beloit machine, also makes coated paper for magazines and job printing. Both machines have new Beloit high-pressure headboxes. The patented Consolidated Water Power & Paper Co. coating process, installed between two sections of dryers, is used. Full machine width rolls are supercalendered on three high-speed open-side supercalender stacks. A modern clay mixing plant with new vacuum clay handling equipment is a feature.

Two separate pulp handling systems are in the groundwood mill, one for book grade pulp and one for news. Here are six General Electric 2,300 hp. motors for grinders, the first of their type built to withstand submersion in floods. They can be sealed in steel covers and air pressure maintained to prevent entry of water during floods. Motor units can also be used as generators.

A peroxide bleach plant for mechanical pulp has only recently been completed. Recent projects: Filter plant was increased to provide an additional 2-million gals. per day, bringing supply to 14 million gals.; first step of a modern sawmill was completed and sulfite cooking has been changed over from direct to indirect cooking.

St. Helens Expansion and Improvements

The $3,600,000 two-to-three-year modernization and expansion program (from present 175 to 225 tons daily) of St. Helens Pulp & Paper Co., St. Helens, Ore., announced by President Max Oberdorfer the first of this year, is shaping up rapidly. According to Mr. Oberdorfer, executive vice president and mill manager, the engineering work is proceeding and orders have been placed for some equipment.

Construction has started on high density stock storage tanks with capacity for storing over a full day's run of pulp. Initially there will be two of these, each with capacity for 135 tons. They are of slip-form concrete construction, built in conjunction with the new building, which will be about 80 ft. wide, 120 ft. long, by 85 ft. high. Facilities to be housed in this building include three-stage brown stock washers (with space for fourth stage) and four-stage bleach plant (with provision for fifth).

Machinery ordered includes Cameron rewinder, C. E. recovery unit, and Impco bleaching equipment and Impco washer. The rewinder, type 18, was ordered to facilitate rapid manufacture of counter roll, thus doing away with manufacture on the paper machine. The rewinder will have motor-driven riding roll lift, and roll ejector for small diameter rolls, including shaft loader and strip holder. He anticipates upping speed production cycle by using pneumatically operated unwinding and plug-roll shafts bought from Pacific Coast Supply Co.

The Impco machine is a 3-stage brown stock vacuum washer with three drums 8 ft. in diameter by 16 ft. long, purchased through James P. Rubush, Wenatchee, Wash.

HOW TO VISIT PACIFIC COAST MILLS

The latch-key is out for delegates to the National Superintendents Convention in Portland, Ore., who wish to visit U. S. and Canadian Pacific Coast mills.

Herewith is a handy reference guide—telling who to contact in order that preparation can be made for a visit and guides can be provided. In some cases phones are listed.

On Tuesday, June 26, there are three special group mill tours on the convention program. M. E. Norwood, St. Helens Pulp & Paper Co., St. Helens, Ore., is chairman of mill visits.

Tour No. 1 is to Crown Zellerbach's Camas and the Columbia River Paper Mills' Vancouver, Wash., mills. The bus leaves at 9:15 a.m. for those 2 mills at the Multnomah Hotel entrance.

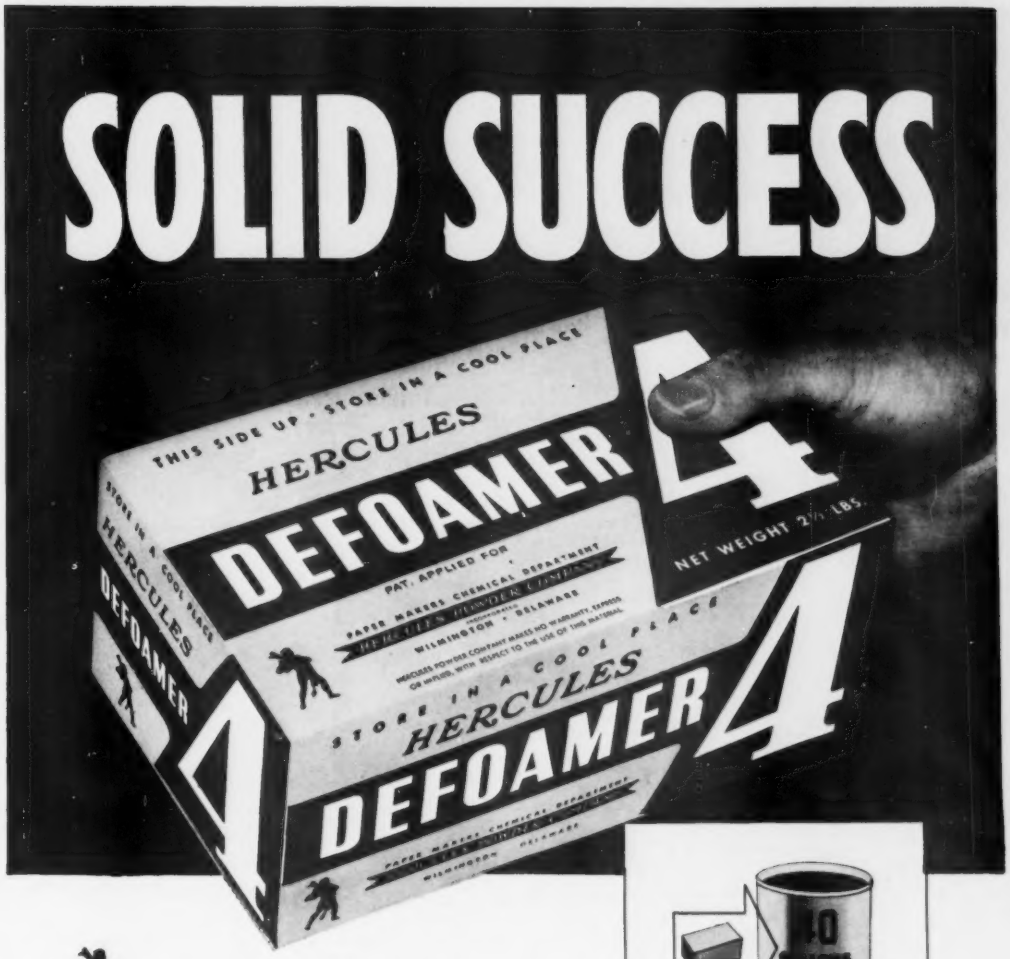
Tour No. 2 is to Longview Fibre Co. and Weyerhaeuser Timber Co. at Longview and leaves at 9:00 o'clock in the morning from the same point.

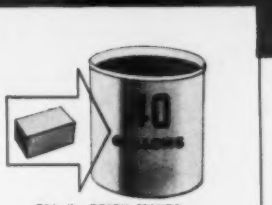
Tour No. 3 is to Publishers Paper Co., Oregon City, and Crown Zellerbach, West Linn, and that bus leaves at 9:30.

Luncheons will be served at the mills and the return will bring the visitors back to the hotel at 5 p.m. Mr. Norwood has asked that as many people as possible advise him in advance of the trip they wish to make.

COMPANY	(Person to Contact — Phone)	MILL
Bloedel Stewart & Welch Ltd.	J. Petrie or E. Walloe — Port Alberni 1200	Port Alberni, B.C.
British Columbia Pulp & Paper Co., Ltd.	L. C. Kelley or L. Cleminson — MArine 7321 (Vancouver, B.C.)	Port Alice and Woodfibre, B.C.
Columbia River Paper Mills	George Miller or E. N. Wennberg — Vancouver, Wash. call	Vancouver, Wash.
Coos Bay Pulp Corp.	J. R. Lewis	Anacortes, Wash.
Crown Zellerbach Corp.	Frank N. Youngman, Vice President — Portland Office	Camas, West Linn, etc.
Everett Pulp and Paper Co.	P. F. Peterson — BAyview 2131	Everett, Wash.
Fir-Tex Insulating Board Co.	Winner Collis — St. Helens 347	St. Helens, Oregon
Fibreboard Products Inc.	J. B. Martin	2424 S. E. Holgate Blvd., Portland 2
Fernstrom Paper Mills, Inc.	Sterling Pugsley and Erik Fernstrom — Lycoming 2-1321	Pomona, Calif.
Forest Fiber Products Co.	Wayne Ooley — Forest Grove 6401	Forest Grove, Oregon
Longview Fibre Co.	R. S. Werthermer or Carl Fahlstrom	Longview, Wash.
H. R. MacMillan Export Co., Ltd.	C. Crispin — Nanaimo 1920-1921	Nanaimo, B.C.
Pacific Mills Ltd.	R. H. R. Young — (Vancouver phone)	Vancouver, B.C. and Ocean Falls, B.C.
Powell River Co., Ltd.	R. M. Cooper — Powell River	Powell River, B.C.
Puget Sound Pulp & Timber Co.	Erik Ekholm or E. O. Ericsson — 4411, Bellingham	Bellingham, Wash.
Publishers Paper Co.	Sam J. Robinson or Carl Braun	Oregon City
Pacific Paperboard Co.	Orville Latimer — Longview 4200	P. O. Box 719, Longview, Wash.
Pacific Coast Paper Mills	P. J. Onkels — 901 — Bellingham	Bellingham, Wash.
Rayonier Inc.	J. T. Sheehy — Hoquiam 2100	Hoquiam, Wash.
Rayonier Inc.	George Cropper — Shelton 1100	Shelton, Wash.
Rayonier Inc.	W. E. Breitenbach — Port Angeles 3391	Port Angeles, Wash.
West Tacoma Newsprint Co.	Neil F. Robertson — Lakewood 2115 (Tacoma)	Box 352, Steilacoom, Wash.
Weyerhaeuser Timber Co.	J. O. Julson	Springfield, Ore.
Weyerhaeuser Timber Co.	R. E. Baker	Longview, Wash.
Weyerhaeuser Timber Co.	R. J. Le Roux — Bayview 3104	Everett, Wash.
St. Regis Paper Co.	A. C. McCorry — BR 0631	Tacoma, Wash.
St. Helens Pulp & Paper Co.	Merrill Norwood	
Simpson Logging Co.	C. L. Walton	Shelton, Wash.
Soundview Pulp Co.	L. S. Burdon — Main 504	Everett, Wash.
Sidney Roofing & Paper Co., Ltd.	T. N. Finical — Empire 4131	Victoria, B.C.
Westminster Paper Co.	John Ashby or Louis Pumphrey	New Westminster, B.C.
Inland Empire Paper Co.	Myron W. Black — Walnut 1571	Millwood, Wash.
Potlatch Forests Inc.	R. Wilber	Lewiston, Idaho

SOLID SUCCESS





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NO DRUMS TO HANDLE

Paper and board mills throughout the country are using this solid defoamer because of its outstanding effectiveness and economy.

Defoamer 4* is the latest of a wide variety of Hercules products designed to meet the needs of varying foam conditions.

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HERCULES POWDER COMPANY

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HERCULES SIZING MATERIALS AND CHEMICALS FOR PAPER

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PPS1-5

All across the North American continent, north to south and east to west, the industry is improving woodlands technics and introducing large scale conservation, reforestation and mechanization.

HOW SOUTHERN KRAFT DOES IT

Visits to Operations West of Mississippi

Part IV

While International Paper Co.'s Southern operations have gone a long way from its initial step in acquiring Bastrop Pulp & Paper Co. in 1925, the significance of this north Louisiana community in the expanding Southern Kraft Division has been maintained. It was in 1920 that this mill was built by the late Richard J. Cullen and his associates. Mr. Cullen was the young engineer who had designed and supervised erection of the sulfite mill at Hawkesbury, Ontario, now belonging to Canadian-International. In 1924 the Cullen group built the Louisiana Pulp & Paper Co. just about a mile from the original mill. In 1927, International acquired the Louisiana mill, lock, stock, barrel and personnel.

So the Bastrop mills became the cornerstone of the Southern Kraft Division; many of its top production personnel are now found in equivalent niches of the expanded operation. Smaller than the more newly built units and completely familiar to Southern Kraft Division personnel, it was natural that initial tests of Fourdrinier Kraft container board and, later, Chemfibre from hardwoods would be conducted at the old Bastrop mill.

CLARENCE G. SNYDER, Camden, Ark., Division Wood Procurement Superintendent, for IP.

The development of hardwood utilization in the industry is natural. Hardwoods abound in the South. In north Louisiana and south Arkansas they are found in extensive pure stands in the delta lands of the Mississippi and its tributaries. On the high lands, interlacing the deltas, pine predominates. On thousands of acres of intermediate sites, hardwoods and pines are engaged in nature's unrelenting struggle for survival, in mixed stands. From the landowners' standpoint, pine grows more quickly to an easy market.

DAVE CAMPBELL (left), Chief of the Arkansas Woodlands Division, and CHRISTY E. ROBERTS (right), Procurement Superintendent for the Bastrop Woodlands Division of International Pulp & Paper Co.

Bastrop Division

There is a considerable acreage of pure hardwood stands in nearby Bayou Boeuf, Bayou Macon, Ouachita and Mississippi river bottoms. When pulping of hardwoods began at Bastrop, instead of using this source, mill procurement buying policy was attuned to the needs of its neighboring forest land owners already providing pine pulpwood for whom the accompanying disposition of hardwoods from mixed stands meets a district management need. This policy results in forest cutting largely on a stand improvement basis, benefiting land owners and stimulating development of future pulpwood supplies for the mill.

Nor is this all, with hardwood needs largely filled from stand improvement, 40% of pine pulpwood comes from thinnings and salvage. The emphasis placed by procurement on stand improvement has progressively increased the percentage of supply from approved type as opposed to clearcutting to 80% in 1949.

In obtaining whole-hearted shipper support, and they are contractually independent, the idea has been successfully sold that both mill and shipper have an identical bond of interest: i.e., the shipper

SOUTHERN KRAFT'S STORY — TOLD HERE FOR FIRST TIME

Here is the last of a series of unusual articles written by our Southern Associate Editor for PULP & PAPER readers, describing the forest production policies and methods of International Paper Co., Southern Kraft Division.

This marks the first time that the important story has been told of how this largest paper company on the continent, and dominant producer in the South, is supplying its nine big kraft mills from Springhill, La., and Camden, Ark., to Georgetown, S.C., with 3,500,000 cords of wood annually. Also, of how it manages 2,500,000 acres of fee ownership lands.

PULP & PAPER'S Southern associate editor toured the company's woods camps in a zigzagging course over several thousands of miles of the South to gather this material.

The Southern Kraft Division management faced a challenge of mammoth proportions in supplying the wood for its mills on a sustained yield basis. The manner in which this challenge was met makes an interesting story.

The story as it unfolds, dramatizes the vital importance of modern equipment in planting and harvesting the timber crop, the vital roles of the men who work and profit from this seed-to-pulp and paper cycle, and the policies of a far-seeing management in working harmoniously with hundreds of neighbors in the South in a vast economic project.

Part I, in our March issue, dealt with the overall picture and with the story in the area of Georgetown, serving the world's largest pulp and paper mill.

Part II, in our April issue, covered Panama City, Fla., and Waycross, Ga., areas.

Part III, in our May issue, covered Alabama and Mississippi divisions.

Advanced Model Chain Saw Joins *TITAN* Line!

TIRELESS TITAN, that mighty logger, points with pride to the newest member of the TITAN family—the powerful, versatile, lightweight TITAN Series 60. See the new TITAN Series 60 in action—as a two-man or one-man power chain saw—see it fell trees, buck, limb, square timbers—do every kind of wood-cutting job. Feel how easy it is to handle—how smooth and fast to operate.

The TITAN Series 60, proudly joining the one-man TITAN Series 40 and the big, 12-horsepower two-man TITAN Series One-Twenty, offers you such advantages as these: 35-lb. motor, single cylinder, two cycle, compact balanced, protected . . . 26" to 60" straight blade bars or a 19" capacity bow . . . toughest alloy steel chain to cut faster, stay sharp longer . . . fully automatic clutch, self-winding starter, dust and water-proof magneto, full 360 degree swivel device.

Ask your dealer for a TITAN demonstration today.

TITAN Series 40 o
able with 18" to

TITAN One-Twenty two-man saw—
12 h. p. for big timber.

TITAN CHAIN SAWS, Inc.
SEATTLE 4, WASHINGTON

TITAN offers you the *complete* line of power chain saws, attachments and access

1—GIRDLING TREATMENT for unwanted hardwoods in Pulaski county, SE of Little Rock, Ark. Trees girdled year before and young pines already showing signs of taking over (axe-handle points to girdle). This area has had the "Fifth Year" or silvicultural clean-up; has been cut for hardwood logs and crossties, pine poles and piling, pine sawlogs and pulpwood.

2—HERE'S A TYPICAL 21-FOOT COMPANY-MAINTAINED WOOD ROAD near Tulip, Dallas county, Ark. Good culverts are put in; prefabricated bridges placed where needed.

3—WHERE ONCE WAS A COTTON PLANTATION, this "old field" pine stand in the Olla district bears a profitable crop of pine trees. This stand was thinned two years before this picture was taken. Note how the pine seed drifted into old cotton rows; produced a row crop of trees.

4—HERE'S A HEAVY SHELTER-WOOD of young loblolly sawtimber size alongside U.S. 270 near Prattsville, Ark. The understory got started four years ago; the overstory stand partially thinned two years ago.

5—GETTING THE GRAVEL OUT of a company pit for maintenance work on the 125 miles kept up by the Olla district. Here are shown: a Dodge truck being loaded; Allis-Chalmers HD-7 tractor with loader, and an Allis-Chalmers motor patrol.

6—PRODUCER TRUCKS LOSE NO ROAD TIME waiting at IP's Camden, Ark., mill wood yard as this 70 foot boom equipped Link-Belt Speeder crane unloads them fast. This crane unloads from 100 to 107 truck loads of pulpwood in a 12-hour day; takes a 2-cord load at one time. Sling cables are passed around the ends of the pulpwood outside the chassis.

should follow a cutting practice that will not destroy future supply, in this case, his livelihood. The shipper is told "here is a business (not unlike a store, farm or shop) that can be continued through a life-time and even may be passed to a son or other successor." The Bastrop procurement organization feels much progress has been achieved.

Because of the problems inherent in the area, much interest is manifested in the place of the forester. Christie Roberts, procurement superintendent and his assistants, Rex Carey and Victor Kuzmitz, are all graduate foresters. The foresters brings to procurement a comprehension of forest growth factors and with it an ability to cope with today's problems so they will not rise again in the future. This is particularly in the transient condition of change. This change not only has been in persuading small woodland owners to become tree-farmers, but also in adaption of mill consumption to meet forest production.

The mill used to have a rigid idea of what wood it could use. Now there is flexibility; a practice of studying both mill and forest needs for avenues of coordination. In this re-examination of what men used to think not possible, both mill and woods organization have been moving forward into a more complete utilization of tree and forest.

The infusion into procurement of graduate foresters is a metamorphis itself, and strictly in line with the firm policy of the company to establish good cutting practice on lands from which its pulpwood comes regardless of source. Originally the professional forester thought in growth only, in protection, doubting he could like the consuming side of the woods management. Now he finds a far greater opportunity of service in procurement where exists a field which needs and affords full exercise of his professional skill. The problem he must continually solve is how to get the wood needed today and, at the same time, have it there ten years from now.

With this slant on Bastrop procurement, some of its shippers prove interesting. Bob VanZandt (a forestry graduate of Univ. of Georgia) in South Louisiana, cuts on lands of Bel Estate, Industrial Lumber Co., Crowell Long Leaf Lumber Co., doing thinnings and salvage work. Many lumber company holdings have been benefited by pulpwood operations in stagnating stands. Trees are taken that would be lost through natural process with the balance benefited from release from competition. Mr. VanZandt's production comes mostly from these sources.

L. C. Ewing took forestry at LSU. Since becoming a shipper he has never bought in bulk except one instance in early career. An example of his determination; he talked an owner into a thinning cut with commensurate price. A competitor came behind, offered a higher clean-cut price; Mr. Ewing topped it, made his cut a little heavier than figured, to come out, turned some stand back to owner. Mr. Ewing has effectuated management agreements with small owners whose lands aggregate 10,000 acres. Some of these acres included stagnated forest in need of thinning. Bastrop's procurement division has been working to develop an organization of shippers and producers who want to stay in the business, and will direct their activities to that end.

Serious emphasis given by the company during postwar years to support of

(Continued on Page 76)

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YARDERS · LOADERS · MOBILE LOGGERS
THE WORLD'S MOST COMPLETE LINE OF LOGGING HOISTS
• Graduated Sizes And Drum Arrangements To Fit Every Job •
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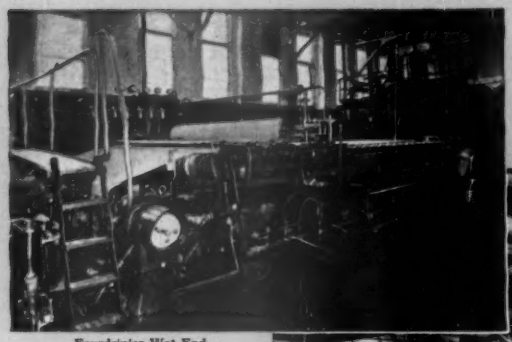
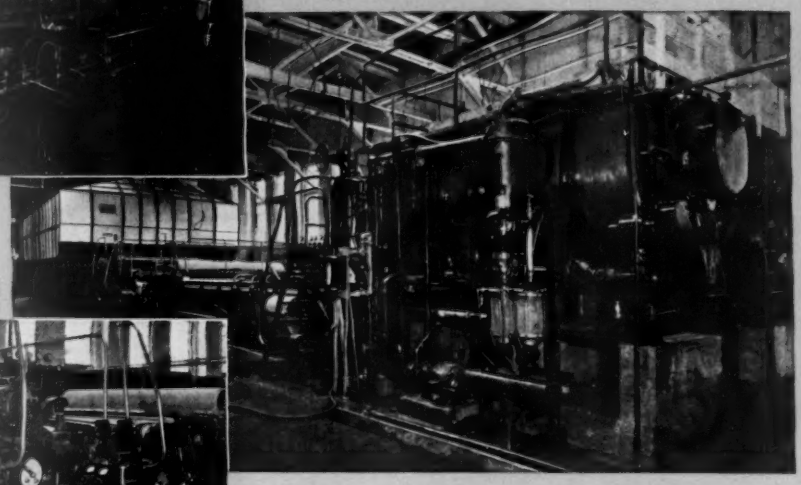
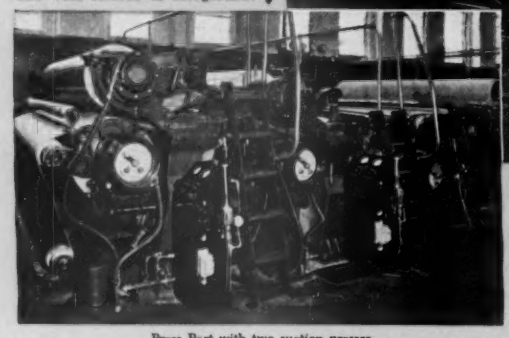


Fourdrinier Wet End



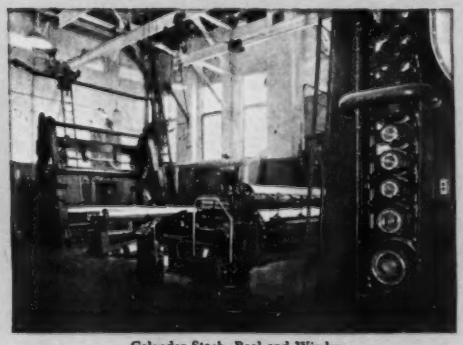
122-inch Puseyjones Fourdrinier at Finch, Pruyn and Company, from wet end with screens in foreground.



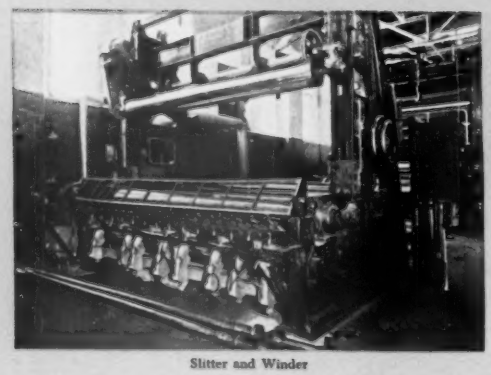
Press Part with two suction presses

Smoothing Press and wet end of driers

Size Press installed in Dry Part



Calender Stack, Reel and Winder



Slitter and Winder

Change-over

like Military Operation

FEATURES OF 122" "PUSEYJONES" FOURDRINIER MACHINE AT FINCH PRUYN

Improved type Finch Pruyn head box arranged for attachment direct to screens and combined with 60" high fully adjustable slice; all stainless steel contruction.

Fourdrinier Part suitable for a wire 75 ft. long, 122" wide, equipped with 30" diameter Downingtown suction couch, 6–7" wide stainless steel suction boxes, 18" diameter Sinclair dandy roll, 8" diameter rubber covered table rolls, 10" diameter brass jacketed wire rolls, high speed duplex shake, 3" permanent pitch wire table, special air-operated handling device for breast roll, copper and brass water piping and showers.

Press Part of improved, close-spaced design with 2–24" diameter rubber covered Downingtown suction presses and 24" diameter granite upper rolls. Pneumatic-controlled pressure loading with both presses of straight through arrangement and felts equipped with Scofield felt conditioners. Wet end smoothing press with 24" diameter bronze cased lower and 24" diameter rubber covered upper rolls.

Dry Part in 3 main sections having one upper and one lower felt on each section; first and second sections each comprising 14 paper and 4 felt dryers; third section, 11 paper and 2 felt dryers; all dryers 48" diameter, designed and constructed for 50 lbs. working steam pressure. Bowser lubricating system for main dryer and drive shaft bearings. Rope carrier device for threading the sheet through the dryer sections. Latest type steam joints with dual revolving siphons. All supporting framework of streamlined box pattern. Hi-tensil alloy gearing with welded steel protective guards.

Size Press comprising 24" diameter chromium plated lower roll and 24" diameter rubber covered upper roll with stainless steel size pan, brass showers, and special Mount Hope type adjustable spread roll.

Calender Stack comprising 10 rolls of 24" diameter bottom, 16" diameter next bottom, and 12" diameter upper, with Bowser oiling system for all roll bearings, pneumatic nip loading system, and Lodding doctors.

Improved Type Pope Reel with pneumatic adjustable loading mechanism and adjustable spreader to handle rolls up to 48" diameter.

Unwinding Stands with adjustable bearing supports and electrical regenerative brake.

Puseyjones 2-drum winder of improved design, suitable for winding rolls up to 42" diameter, with special arrangement of score-cut slitters; variable speed direct-connected double motor drive.

Mechanical drive for each section with individual enclosed spiral bevel gearing, Airflex clutches and motor-operated belt shifters. Basement line shaft driven from turbine.

All rolls throughout machine equipped with roller bearings and balanced suitable for maximum operating speed of 1000 ft. per minute, except winder at 3800 feet per minute.

There's a new No. 1 Machine at Finch, Pruyn and Company, Glens Falls, N. Y.

The change-over from a 90-inch to a 122-inch Fourdrinier Machine was carried out like a military operation. They had to rebuild the foundation for the wider and heavier new machine. The mill organization worked around the clock to put the new machine into operation without costly change-over.

Here at Puseyjones we are proud of our close association with Finch, Pruyn. Their first two machines—90-inch and 118-inch Fourdriniers—were built by Puseyjones in 1904. The No. 3 Machine, a 150-inch Fourdrinier, was built by Puseyjones in 1909. The new No. 1 Machine delivered in 1950 represents a new high in the papermaking art. Designed for a speed of 1,000 feet per minute on groundwood specialties, it practically doubled production of the machine it replaced.

Puseyjones engineers will welcome the opportunity to discuss your papermaking problems. If you are thinking of modernizing or adding to your present equipment, get the benefits of Puseyjones experience on Fourdrinier Machines, Cylinder Machines, Yankee Machines, or a modification of any of these types. Write us.

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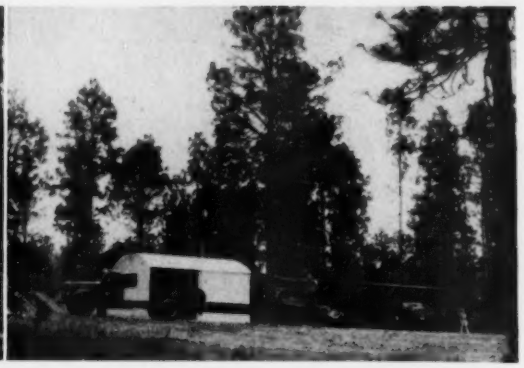
Established 1848. Builders of Paper-Making Machinery
Fabricators and Welders of All Classes of Steel and Alloy Products
Wilmington 99, Delaware, U.S.A.

THE SIGN OF TRADE MARK SUPERIOR QUALITY

LUMBER COMPANIES HAVE LEARNED TO LIKE "PAPER WOODING" in their stands as it "straightens" up the woods. Here's a thinning job done in 20,000 acre tract of S. H. Bolinger Lbr. Co. by E. S. Walker (Plain Dealing, La.) shipper for Springhill mill. Left to right: E. S. Walker, forester, and W. B. Bolinger, company officer; R. E. Leslie, Springhill procurement superintendent; and W. M. Bailey, procurement administrative assistant.



EQUIPMENT HEADQUARTERS OF THE OLLA DISTRICT (Jena, La.). Here's an International K truck with special Nabors trailer for taking fire suppression (Caterpillar D-2) tractor and (Ranger Pal) fire line plow to a blaze.

Southern Pulpwood Conservation Association cutting standards has caused industrial forest land owners, particularly lumber companies, to evidence greater interest in having growth stagnated stands opened up by pulpwood thinning operations. The increased pulpwood consumption by Bastrop mills from 1945 to 1948 was met largely from industrial forest sources.

The procurement approach is to convince the forest land owner of the soundness of company policy in cutting practice, then offer to: (1) Cut to markings of the owner's forester; (2) furnish a trained forester to mark trees to the benefit of the stand; or, (3) follow the markings of a consulting forester. Procurement says that once an owner is convinced of the value of sound forest practice it is essential to make it possible for him to follow through into actual cutting.

The company's woodlands are growing trees from which come sawlogs, crossties, poles and piling. It sells logs to sawmills that sell pulpwood back to the company. From this exchange the pulpwood procurement man enjoys a rising tide of good feeling from the lumber industry. Procurement tells its men theirs is the task to engender and increase these good relations with land owners; that those identified with the company must be on their guard not to do or say anything that a suspicious countryside might interpret as "putting on airs," or against anything that might be misconstrued as a "slight."

Besides using the standard pulpwood frame with which most all of the pulpwood trucks were equipped in the recent past, many of the truckers are equipping their trucks with Dixie Pulpwood pallets where trucking to mill. This equipment reduces labor costs in handling the wood and facilitates accessibility of wood to truck which increases payload time on each truck unit. A truck equipped to handle these pallets hauls 50% more wood than a truck equipped with the conventional wooden frame. Two trucks equipped with the pallets will haul as much wood per week as three trucks with the conventional pulpwood frame. The trend at present is to heavier trucks and truck trailer equipped with pallets and to larger payloads. Truckers make savings using Butane gas as truck fuel.

Most of the cutting in the truck wood area around the mills is done with power saws, either the circular saw type or the chain saw type. This makes possible the utilization of sawlog tops and other small volumes scattered over an area. Most of the unloading of trucks at the mills is done with cranes equipped with cable slings.

Natchitoches

The woodlands division at Natchitoches, La., under B. A. Ryan, has 300,000 acres of which 80% to 85% is owned in fee and the balance held under long term timber lease. In management, there exists no distinction between the two types of tenure. The division's lands are scattered in 14 parishes (counties) and administered in seven districts.

For effective fire control and land management, every unit of land down to a 600 acre area have been made available to truck access. The general fire supression procedure has been based on "don't wear a man out walking TO the fire." The sound principle has been to get a tractor and plow there fast on a truck.

One of the obstacles to good land management in this division has been cull hardwoods in the stands. Thousands of feet of these were sold out during a favorable postwar market; not much merchantable left. In areas where the hardwood has no value, the district foresters have used girdling or turned to Ammate poisoning, a DuPont product, which also stops sprouting. Ammate is toxic to hardwood but not to livestock. Poles and piling have been disposed of, and pine sawlogs sold to lumber companies who sold pulpwood back to the company. The general area did not have too much forest capital at the start.

The Olla district was opened in 1926 and until 1945 received cut-over lands at six month intervals from a lumber company as they were cut for saw timber. The residual forest that fell to the company reflects the passing years; the better the times, the sorrier the stand left. Some lands are in rough Catahoula hills lying west of Harrisonburg to the Ouachita river flood plain.

Each district is provided with an equipment center, built within a fenced-in acreage. A water well is provided. Fire suppression equipment made standard generally includes a small tractor to draw a fire line plow, a truck and trailer to transport it, and a Dodge power wagon or some other motor vehicle equipped to reach a fire rapidly. The Dodge or truck is equipped with radio, water tank and pressure spray pump.

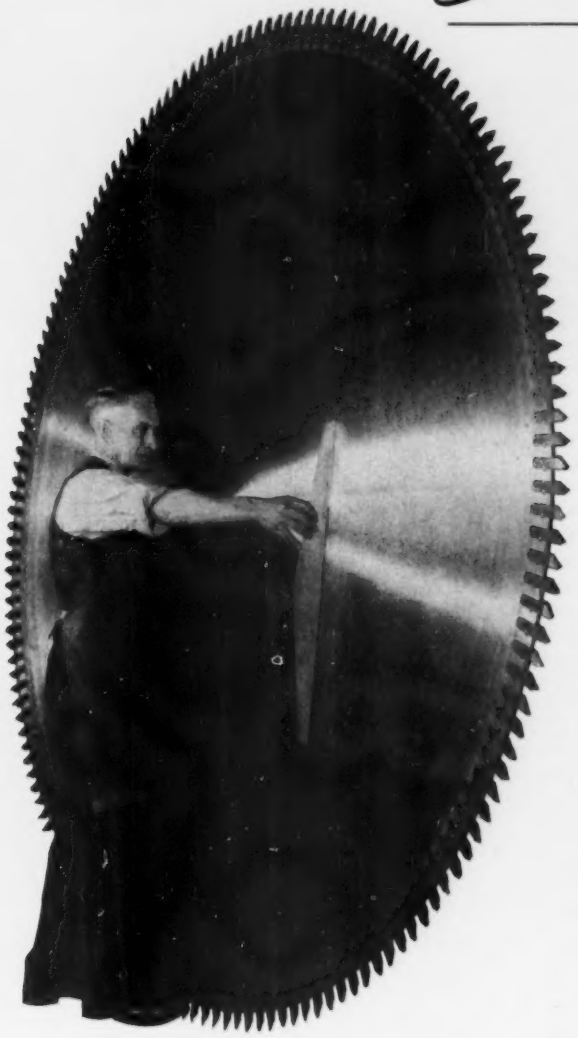
At Zwolle, the Dodge power wagon will be found. Olla has two International transport trucks with trailers to carry the Caterpillar D-2 tractor and fire plow. The specially designed trailers can also carry six cords of pulpwood during non-fire seasons. Springhill has an Oliver HG-42 tractor, fire plow, pick-up truck and radio. The Olla district maintains about 125 miles of roads, applying gravel from a pit on company land. Equipment used includes: an Allis-Chalmers HD-7 tractor with dozer; a Caterpillar motor patrol; two graders; a Caterpillar D-2 tractor to pull either a light grader or fire line plow; a Dodge truck; an Allis-Chalmers motor patrol with loader; and the jeep.

Springhill

A large percentage of shippers providing over 2000 cords of pulpwood daily to the Southern Kraft Division's mill at Springhill, La., started with the plant when it first produced paper in 1938. From the first, the mill was big and the procurement organization had a commensurate task. Under guidance of men skilled by long years in the forest field, procurement has not only fed wood to the mill, but in the process has made effective the "conservation story" in a practical way.

The procurement organization has four districts and its chief is R. E. Leslie, whose know-how embraces 20 years with Dierks interests and seven years with Southern Kraft. William M. Bailey, a graduate (N. C.) forester with four Army years and 10 company years, runs the Springhill district and is assistant to

SPEAR & JACKSON *Saws*



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Why does a Spear & Jackson inserted tooth cut-off saw cut true and run longer without hammering? The fact that Spear & Jackson have 175 years experience back of every saw they make speaks for itself. But here are some reasons why Spear & Jackson saws have established world leadership in performance and service.

Inserted Tooth Cut-off Saws

Teeth are forged in such a manner as to prevent vibration in the cut, ensuring a clean, smooth cut and minimum wear. This forged tooth is essentially a Spear & Jackson innovation.

Leadership in the Making

Other Spear & Jackson manufacturing techniques include . . . precision anvil work which ensures a true running saw . . . grinding to exact thickness, ensuring a perfectly balanced saw . . . tempering to standards as determined by analysis and conditions under which the saw will eventually operate . . .
Step up your board-footage, at a lower cost per board foot, with "The Saw Without a Flaw" . . . a Spear & Jackson Saw!

SPEAR & JACKSON

"The Saw Without a Flaw"

SHEFFIELD, ENGLAND EUGENE, ORE., U.S.A. VANCOUVER, CANADA

Mr. Leslie. Some shippers are quite large, up in brackets in which they attend only to timber rights purchases, financing, etc., with subshippers to follow through with producers. Some producers work independently with first one mill then another.

Mill procurement developed a quota system under which the probable pulpwood needs for 12 months ahead were estimated, and allocated on basis of their capacity to shippers. The shipper's basic quantity for each quarter was given him, and followed by purchase orders covering cars per week expected. The shipper bargains ahead for timber, keeps his equipment in shape, plans his business.

Wherever soil conservation service, county agents and conservation foresters have consulted with and advised small land owners, the mill has been there to cut—according to their advice, taking the pulpwood at the fair market. When demonstration cuttings have been scheduled, procurement has seen to it that the wood cut moved to the mill with compensation to the land owner. Demonstrations, with barbeques, attended by from 50 to 75 land owners, shippers and producers have proven effective.

Full participation has been registered in such events as the Plain Dealing (La.) annual forest day event, a feature of which has been the planting of seedlings at the school by the 6th and 7th grades. The students tend these plantings during their remaining attendance through the 12th grade.

For many years, emphasis of supply was on the 40 and 80 acre small owner tracts. In recent years, full cooperation and support of Southern Pulpwood Conservation Association standards and local participation in conservation programs resulted in the mill procurement getting into lumber company stands, in many instances of stagnated growth.

A typical example was that of S. H. Bolinger Lumber Co., a Shreveport company with 20,000 acres near Plain Dealing. W. B. Bolinger watched E. B. Smith, IP shipper, "straighten up" his woods; was delighted with results. Stands emerged with an ample residue of well spaced, straight trunked trees that will keep land working and speed up growth. Mr. Bolinger got the logs; the mill received the pulpwood.

Camden

North of Bastrop, at Camden, Ark., is the first mill built by Southern Kraft Division (1928) procurement for which is under Clarence G. Snyder, a New York Ranger School forester. Pulpwood supplies come about 35% from large, 65% small owners. Hardwood is sent to Bastrop.

Most producers operate two or three trucks; many, bow saws; some wheeled pulpwood saws. Most of them are too small for mechanization. Where the power saw is used it is after the felled, limbed trees are bunched. Some chain saws can be found. In the southern part, negro woodsmen are plentiful. Farther north, in the Ozarks, all labor is white.

Effort has been directed toward a shipper-producer organization "sold" on good forest practices. Many are former company woods employes; some are foresters.

The Camden mill receives a lot of truck wood, unloaded with a 70-foot boom Link-Belt Speeder crane. Cables are looped about the pulpwood ends and the entire truck load taken at one time. The crane unloads 100 to 107 trucks in 12 hours.

Sidney Holmes, a company employe for 11 years, started in a tree-marking crew. Mr. Holmes now runs three trucks himself and has two men, each with two trucks. He ships about 20 cars (300 cords) weekly; is thoroughly conversant with the mill's program.

The procurement organization works closely with the company's conservation forester, passing to him tips about small owners interested in learning. The forester distributes seedlings for the company and maintains many public contacts in FFA, 4-H, summer forestry camps, educational work, luncheon club programs, tree marking for small owners. The conservation forester is given much credit for the increase in production of pulpwood from partial cuttings since the war. His work in determining the extent of compliance with Southern Pulpwood Conservation Association standards is of definite importance.

ABOVE—SELECTIVE CUTTING ON LANDS OF ANTHONY LBR. CO., north of Harrell, Ark., by a producer for Sidney Holmes, Jr. Trees are marked, felled, bunched to where the truck can get, then bucked with a two-wheeled pulpwood saw. This job includes three trucks, two Lowther saws, three animals and eleven men.
BELOW—Woodlands standard equipment building (this one at Sheridan, Ark.) is of concrete block (28x12) with corrugated aluminum roof and a 12x20 closed space for repair parts, supplies, etc. A separate structure houses paints, diesel fuel, other inflammables.

In the Camden woodlands division, Southern Kraft owns about 600,000 acres in fee. For this acreage it has established a management program based upon five years' work to establish a growth of preferred species in accordance with potentialities.

Unlike the long leaf pine belt, these Arkansas lands are not characterized by eye-reaching stretches of sparse forest but present a scene of intense struggle for survival between hardwood and pine species. The task here is to take sides in each location, performing whatever service is necessary to resolve the contest speedily one way or another.

Of the acreage as a whole, approximately 10% is pine stand, 60% pine and hardwood, 15% hardwood and pine, and 10% hardwood stand. There is a limited acreage of open land such as old fields, savannahs, etc., the largest amount actually being rights-of-way for highways, railroads and pipelines. Arkansas Forest and Park Service, the state agency, performs an excellent job in fire protection, for which the company pays an acreage assessment. On a stubborn blaze, the company may provide some help. Each company district forester carries 2-way radio installation in his jeep for contact purposes. During fire season he may carry suppression equipment.

The Arkansas woodlands division is divided into five districts, and is directed by David Campbell. In its silvicultural program the timber stands on the company lands have been described as to types, age, density and site characteristics. There is no general policy insofar as silviculture is concerned, everything being related to requirements of each compartment. In setting these up aerial photographs are used in conjunction with ground check. Differences are carefully noted with accent on the ultimate marketing. One compartment may run to pine species; another to hardwood. The species, density of stand, diameter of trees, and volume are entered on a permanent card record. Each compartment has a number that relates to a numbered map. To sort the cards for desired information as to any specified species, size, etc., takes but a matter of minutes.

The organization is not working to relate the operating management plan to an over-all average acre but to definite area. The program looks to each acre during its next five year period for attainment of best possible condition for: (1) production of pine where feasible; or (2) for hardwoods if these species apparently are best for the actual conditions.

In order to accomplish the task of bringing each acre to its best productive condition during the five year period, the procedure has been formulated whereby a number of contiguous compartments are grouped to form a unit of about 6,000 acres. Then the five annual treatments are applied:

First year: Block and classify the lands, describe them, and build roads for accessibility. Second year: Make a careful cruise, sell out (cut) the best grades of hardwood and as much of lower (unwanted) grade hardwood as possible. Third year: Sell out (cut) pine poles; cruise and mark pine sawlogs and sell them out at year end. Fourth year: Cruise and mark pine pulpwood, and sell them out along with pine tops left from sawlog harvesting. Fifth year: Plant pine seedlings where needed; girdle any hardwoods that need to come out. The fifth year is called the silvicultural clean-up.

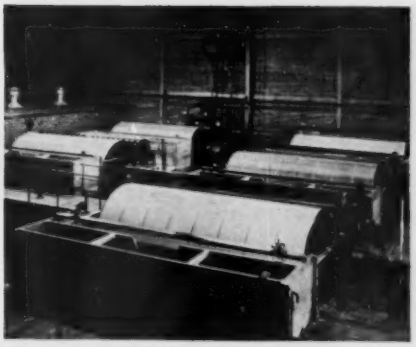
The Arkansas organization includes 18 graduate foresters and a total of 82 men. Before the decade is concluded it is anticipated the or-

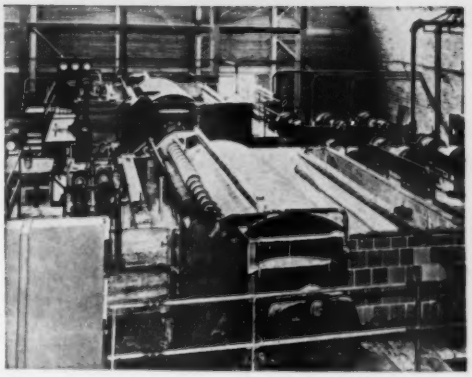
OLIVERS

*5 GROUNDWOOD DECKERS

key equipment at COOSA RIVER

*2 DECKER-SAVEALLS





All seven units are rubber-covered with stainless steel fittings!

Coosa River is a modern newsprint mill, an outstanding mill in the South and one of the finest in the country. While the selection of Olivers for the important filtration work at Coosa naturally is gratifying to us, we wish to call to your attention another factor: the step taken by Coosa to eliminate possibilities of corrosion and contamination. Specifications called for rubber covering and stainless steel fittings.

Newsprint mill trend is in that direction. For example, we recently received an order for 6 Olivers of similar design for the lastest newsprint mill being projected in the Western Hemisphere—the new mill at Duncan Bay, British Columbia

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ganization will include 42 graduate foresters and 70 forest technicians.

The organization does the girdling, marking and poisoning of the trees. The experience has been that poisoning costs run 25% to 30% higher than girdling on tree sizes in these stands. In girdling, the selection is upon the form and condition of the tree as well as on the species. The objective is to leave good trees. A big hardwood may take up ½th to 1/16th of an acre. Its roots may run out two or three times the radius of its branches. The same area might support 100 to 110 pine seedlings. The division has been going heavy on hardwood removal.

The Arkansas lands lie within the transition phase from Coastal to Upland. In pine, the stands run 60% loblolly and 40% shortleaf. Hardwoods run to red and black gum, red oak, hickory, but with other species included. Stands are well mixed. Division forces are used for cutting only when to-thin stands require silvicultural action. Some lands have been held 20 years. All lands had been cut several times for timber.

Each district has a well equipped headquarters, including a 28x64 concrete structure with corrugated aluminum roof for equipment housing. This includes a 12x28-foot space for hand tools, repair parts, etc. A separate 12x20 concrete block, cement floored building houses diesel oil, paint, other inflammables. Each ground space embraces two fenced acres. In some places a residence has been provided for the district forester. Each headquarters has a water well, and when isolated, a gasoline tank and pump.

Standard equipment for a district includes: A radio equipped Willys jeep; a tractor with angle dozer; 4-cubic-yard dump truck; a flat bed truck; a pulpwood truck; and a pick-up truck. Some of the employees own their own jeeps, are allowed mileage on company work. There are about 20 of these in the division.

Road building and maintenance is performed by a special force moved from one district to another. Its equipment includes: A 15-ton low-boy Nabors trailer that is pulled by an International KS-8 truck equipped with Bendix Westinghouse air brakes; an Allis-Chalmers tractor outfitted with a Brott gravel loader; a Caterpillar road patrol; an Austin-Western road patrol; and a seedling planter. Added to this is a mobile pile driver, a gravel loader, and scraper.

The plan of network woods roads on company lands calls for completion of 200 to 250 miles annually. These are standard 24-foot crown width, with concrete culverts and creosoted bridges on piling where needed. Bridges are of standard design pre-cut for 10-foot and 15-foot bents ready for delivery to sites for assembly. Gravel is applied where necessary. The objective is to make roads usable during 40 to 50 weeks in the year.

The forest area in general is well crisscrossed with old county roads, abandoned tramways, CCC trails. The trails have been important in successful fire control. Arkansas' state fire control has been excellent, ranking well among Southern states.

As you drive up State Route No. 4, the Southern Kraft woodlands almost solidly back up those touching the highway, only breaking through to the road in an occasional 40 or 80. The woods are everywhere, pine and hardwood fighting for space. Here is life in all forms; and to the observer the realization comes that here International Paper Company is not an indefinable outside corporation, but a vital neighbor whose forest men buy pulpwood and sell logs, make jobs for residents, cause money to flow in town and country; a good neighbor to have.

WOOD FOR B.C. MILL

To supply the 80 million or more feet of pulpwood required annually by the Columbia Cellulose Co., Ltd.'s mill near Prince Rupert, B.C., is the responsibility of the Woods Division under the direction of Rae L. Johnson.

It is considerably more than just a job; it is a challenge and represents a significant milestone in development of British Columbia's timber resources because the company is putting to its first practical test the forest management program initiated by the provincial government three years ago. The Columbia Cellulose license covers a vast territory in Northwest British Columbia comprising 659,000 acres, about 1,000 square miles. Under the agreement, utilization will balance natural growth. Estimated allowable cut is 14.5 million cubic feet a year.

Woods Division Personnel

The company chose to head up its Woods Division a young, resourceful forest engineer who had intimate knowledge of how one of the world's great forest enterprises, Weyerhaeuser Timber Co., had conquered a problem which, in important aspects resembled that now faced by Columbia Cellulose. Rae Johnson served 20 years with Weyerhaeuser's Longview branch, the last seven as chief engineer of the Woods Division. With Weyerhaeuser he was closely associated with development of the St. Helens Tree Farm, which involved conversion of some 500,000 acres of forest to sustained yield management.

Mr. Johnson, is a registered civil engineer in Washington and Oregon; with Weyerhaeuser, was in charge of various phases of engineering, including mapping, railroad and truck location, construction logging layouts and development of new equipment.

Under him and bossing different regional operations, which eventually will employ some 600 men, with seasonal fluctuations, Mr. Johnson has three superintendents. A coast camp on Kutzeymateen Inlet, Portland Canal, which will ultimately provide about one quarter of the company's pulpwood, is under Howard Reid, well known West Coast logger. At Terrace Camp, where interior logging is concentrated, the superintendent is Harold Lynum, Norway-trained forester and logger who went to British Columbia 30 years ago. Top man in the company's river operations, primarily on the Skeena, is T. A. V. Tremblay, from Quebec and Ontario. A considerable volume of the interior cut will be driven out on the Skeena.

The Skeena River Drive

Just how big a place the river drive will play in the Woods Division's operation remains to be seen. The summer of 1950 offered limited opportunity for a reasonable test. The weather was abnormal—long stretches of hot, dry weather, with water levels low. About 9,000,000 feet of logs were prepared for the drive, but only about a million feet were delivered that way; the balance will come out this spring. The distance from Terrace is 80 miles. The Skeena reaches the Pacific at a point 20 miles from the mill.

Logs arrive from the coast camp in flat rafts that have to be towed about 40 miles to the mill—a 24-hour job under favorable conditions.

The Equipment Being Used

The coast camp equipment setup during coming months will comprise the following major units: a Clyde slackline yarder, with Cummins diesel engines; a Hayes 12-12 yarder with Hercules engine; two Skagit Steel & Iron Works yarders, made in Sedro-Woolley, Wash., one with Hercules and one powerd with 200 hp. Cummins diesel; two Tyee yarders with Cummins diesels; one International TD 24 tractor with Isaacson blade, towing winch and arch. All yarders will have Gearmatic transmissions.

In the interior the company is now getting nearly all of its pulpwood from independent loggers operating fairly close to the rivers, and this will continue to be a major source of supply until the company's own limits are more fully studied and developed. High lead logging there is being done under contract with two Hayes-Lawrence 10-10 yarders and one "Logger's Dream," and cat logging by International and Caterpillar tractors in smaller models. The company is operating four International TD 18 tractors equipped with Isaacson blades, winches and arches. Powersaws of various makes are used in the woods by logging contractors.

Road construction in the Terrace area is being done by Columbia Construction Co. (no connection with Columbia Cellulose), who have two Bucyrus-Erie shovels and an International TD 14 tractor.

Will Be More Production in 20 Yrs.

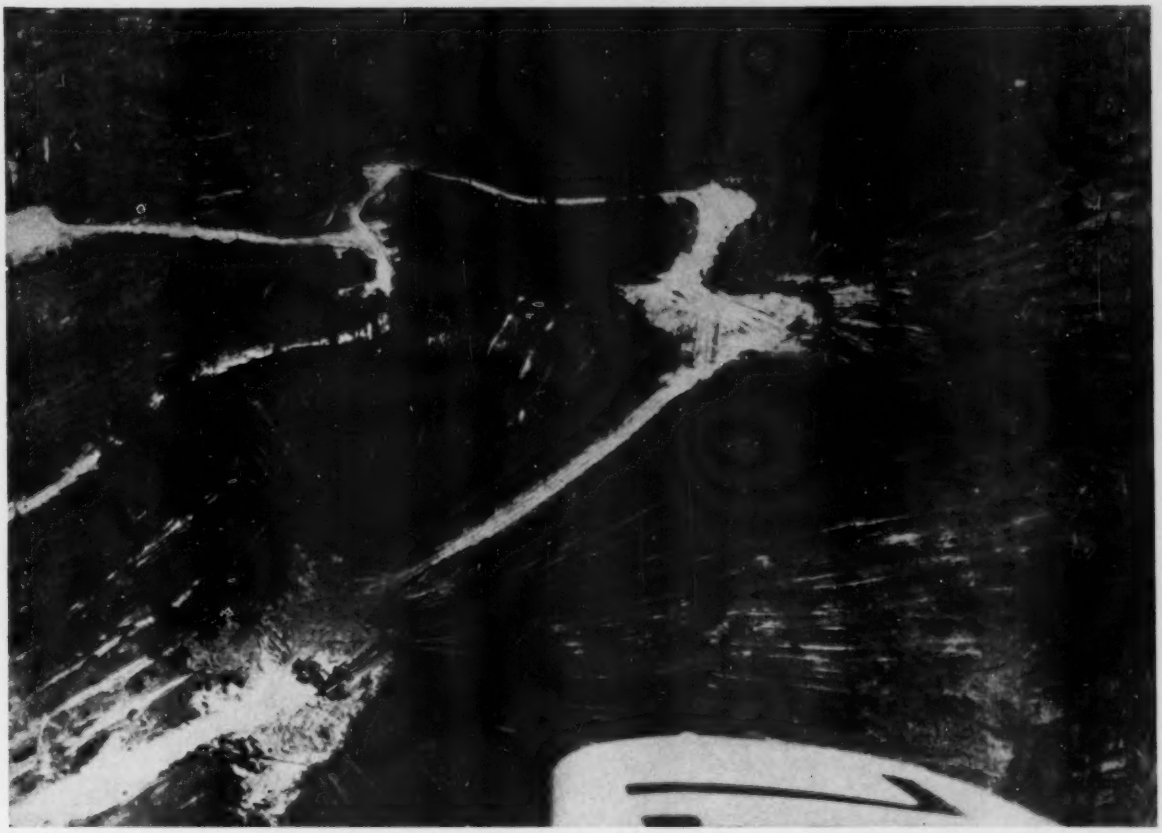
By clear cutting in strips and blocks, providing every opportunity for natural regeneration and replanting where necessary, Mr. Johnson told PULP & PAPER that he expects the forest under development to be actually more productive after 20 years of careful management than it is today.

For the managed forest it is planned to cut over-mature timber first. About 20% of the total stand is estimated to be in that category, and that may take 20 years, but by that time the forest will have a much greater percentage of vigorous, mature or second growth trees growing more rapidly and providing more room for new stock. The general aim under average conditions will be to striplog in scattered blocks, taking out two-thirds of any given area and leaving one-third in blocks of 30 to 40 acres. No opening in the timber will be of more than 300 acres in the initial cutting.

Columbia Cellulose Co. has long-range plans for expansion on its own account and these, of course, will call for an increasing flow of wood, but the fact remains that Prince Rupert and Watson Island are the natural focal point for a vast empire of timber that so far has barely been touched.

MARATHON METHODS IN CANADA

Tree Length and Bundling Systems Described



AIR VIEW OF YARDED AREAS in Marathon's Woodlands in Ontario, taken from plane whose wing tip is seen in lower right. A slasher is working in lower left clearing. At upper right and upper left are two Pacific Car & Foundry Co. (Carco) arches.

Marathon Paper Mills of Canada woodlands division, operating one of the most progressive mechanized logging programs in Eastern Canada, has carried out sweeping changes in its woods handling technique during the past year or so and, as a result, is getting over 50% more production. Its present system is the result of four years of practical experimentation.

The woodlands division, headed by Vice President P. L. Klinestiver, who was taking out logs in the Cranbook region of British Columbia in the early 20's, has gone a long way towards standardizing equipment regardless of timber, topographical or other variable conditions. Few other companies operating in the East can match it for all-round woods efficiency.

"We feel that we have a pretty fully streamlined operation now, and one that reduces bottlenecks to a minimum," Mr. Klinestiver told a PULP & PAPER editor recently. "Our foundations have been laid for a thoroughgoing sustained yield program. We're taking out a lot of wood and we are well pleased with the evidence of regeneration in the areas we have already logged."

Principal machine units used by Marathon in this project are three Carco arches, made by Pacific Car & Foundry Co., Renton, Wash.; seven Skagit yarders, made by Skagit Steel & Iron Works, Sedro-Woolley, Wash.; six skidders manufactured by Superior Lidgerwood Mundy Co. of Duluth, Minn., and six Timberland skidders made in Woodstock, Ont. The company maintains a fleet of International trucks and some smaller trucks, including Fargos. The slashers are manufactured by Northern Engineering Co. of Fort William, Ont.

Up till now the woodlands division has used the camp at Stevens on the Canadian National line as a base, but Caramat is now being developed as the main camp. This is located about 20 miles east of the station of Long Lac on the C.N.R. (not to be confused with Long Lac Pulp & Paper Co. at Terrace Bay). Stevens is another 20 miles to the east. The company plans to operate there indefinitely. It is building permanent homes for its employees, substantial machine shops and buildings.

Closely tied with the whole pattern of operation is the company's conviction that the fullest possible mechanization is the key to profitable wood-handling procedure. Mechanized equipment appeals to a more skilled personnel—men who want to stay on season after season. With machines and the right men, Marathon plans to log practically the year round. In the old days, no one would take you seriously if you talked of year-round operation in Ontario.

The company's forest, running chiefly to spruce, balsam, jackpine and poplar, has been laid out in eight compartments with the idea of harvest—the annual growth of each on a perpetual basis. The area to be cut over is carefully studied on aerial photographs, summary of estimates, stand tables and on the ground. Every stand, every strip is carefully considered before the operation begins.

Planning of Operations

The overall plan is carried out by a planning committee comprising the chief forester, George R. Sonley; the operating manager, P. V. LeMay and Mr. Klinestiver, who decide what area is to be cut over each year. The area is then carefully studied by the district foresters—Dick Harkness at Stevens, and Haj Kagetsu, Japanese forestry graduate of University of British Columbia, at Caramat. The width of each operation is carefully considered and determined, depending on topography, the skidding system to be used and the equipment available, as well as the season. Stands having an average d.b.h. of 8 inches can usually be operated more economically by tree lengths.

"Setups are chosen to which the wood will be skidded and left in the cold deck," explained Mr. LeMay. "These setups are determined primarily by topography and desirability of the site for setting up yarders and slashers and for maneuvering the trucks. On an average, a setup will log about 20 acres. This means, if the stand averages 25 cords, there will be piled in cold deck at the setup 500 cords of pulpwood in tree lengths.

"In addition to marking the center of each setup, its exact boundaries are also blazed or picketed. No exact road location is determined on at this time, but an approximate location only. The final location is only decided on after all trees on the setup have been felled. Thirty or 40 setups are located before the operation begins and a minimum of, say, 25, is maintained ahead of the operation until near the end of the season, when finally all have been located.

"When a large enough number of setups have been laid out, falling may begin as the season permits, usually after mid-April. Fallers, most of them using buck saws—there are few power saws in use on the Marathon operation at present—are assigned strips just as they are on the manual operation.

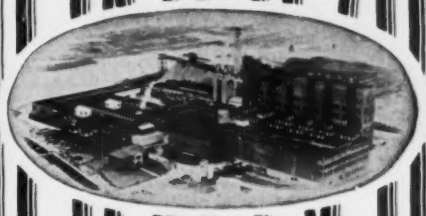
"The falling pattern must be uniform; all trees are felled in a direction away from the setup. It doesn't matter for skidding purposes which end of the tree comes first, but it is important at the slasher that the butt be presented to the saw first. This is the reason for the falling pattern. Fallers of course must begin their strip at the outer boundary and work towards the setup. Early in the falling season the camp should be filled with fallers, many of them being yarder and slasher crews, truck drivers and other specialists who later return to their regular jobs."

The main idea is to build up the cold decks as fast as possible. The area is clear cut and six inch stumps are left. To encourage this fallers are paid on a stump diameter basis so that it pays them to cut as close to the ground as practicable. This practice helps in yarding because the low stumps offer a minimum of resistance. The company has found that one advantage of this form of yarding is that the ground is scarified to some extent by friction of the tree lengths which in turn tends to drop and scatter the seed cones.

Yarding starts as soon as enough wood is on the ground to assure a constant supply without delay for the yarders. This may be two to four weeks after falling starts. The company does not use tractors for yarding at all, as the rough ground has been found unsuitable for them. But tractors play an important part in road building and in moving the yarders from one setup to another.

MARATHON OF CANADA Woodlands views:
1—Caramat, one of bases for woods operations, is expected to become a permanent forest community.
2—Fargo truck under the bundle, which is ready to be lowered into position by direction of the top loader.
3—Slasher in operation. These units were developed by Marathon's Master Mechanic, Ole Olsen, and now are being manufactured at Fort William, Ont.

SOUNDVIEW



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Two Different Methods

Two different logging methods are used at the Marathon camps, each supplementing the other, and the overall plan has been to insure year-round operation.

Stands having an average diameter at the butt of 8 inches can usually be operated more economically by the tree-length method, according to Mr. LeMay. So a good deal of tree-length logging is done. The other technique is bundling, and both systems have their advantages and disadvantages. The tree length operation suffers if trees are cut before snow falls and yarded afterwards, more especially if the trees are small or the stand scattered. The bundling operation, on the other hand, is little affected by snow. Topography does not appear to affect either system seriously.

However, hardwoods must be cut during the growing season so that they will float; they are usually on high ground and nearly always have a fairly high tree run. These conditions favor a tree-length operation. Black spruce is often small and grows in swamps, indicating a bundling operation.

The company sought equipment that could be used both for tree-length logging and bundling, and the standard yarder proved versatile enough to enable the company to proceed with what it calls "bundle yarding."

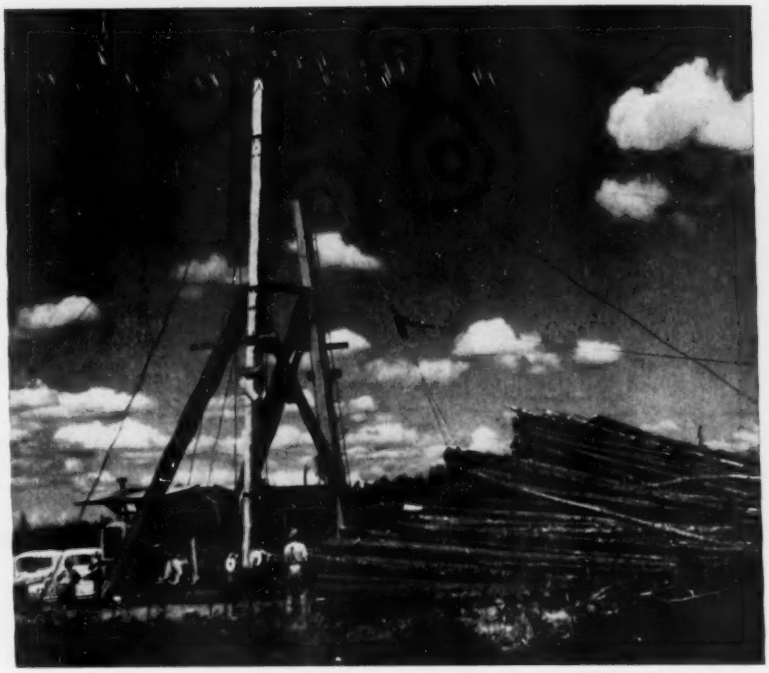
Tree length operations are usually carried out before the snow flies. Falling starts in the spring and continues throughout the summer and fall. Yarding starts as soon as enough trees have been felled to guarantee continuous yarding. Slashing may be commenced at any time. Slashing actually is carried on day and night—by floodlights when necessary, when the operation is in full production. The slashers consist of a hydraulically-controlled 40-in. circular saw operating with live rolls and with an end loader ingeniously designed by Ole Olsen, chief mechanic, and now manufactured by Northern Engineering Co., of Fort William, Ont., under the name of Nesco.

A-frames on the yarders were originally about 28 ft. high, but they now approximate 45 feet and that is regarded as the limit. However, there is an advantage in greater height, so movable spar trees have been used to some extent.

Bundling Techniques

Bundle skidding might be called a dual operation, and it's hard to describe one without showing its relationship to the other phase. In the bundling technique, main truck roads are laid out and built at intervals of 1000 to 1300 feet; this is the same for tree length operations. Strips are laid out at 90 degrees to the road at about 60 foot intervals.

At first, the bundle-yarding layout followed the same general plan as for the tree length operation; that is, the radial strip system, but this was changed to a system of parallel strips at 45 to 90 degrees to the main haulroad. Where the yarder to be used had the A-frame on the front of the sled, a 45 to 60 degree angle to the main road was used. Since the bundling practice has been established, however, the A-frame has been changed from the front to the side of the sled.



VIEW SHOWING *A-frame-set-up yarding tree-length logs, and cold deck. Marathon uses A-frames of spar trees in its tree-length yarding, using both Carco winches-arches and Skagit yarders.*

When strips have been laid out, the cutters begin cutting. The operation is similar to a manual show. The cutters cut the tree into 100-inch lengths and pile them in piles usually of one cord, with variations. Instead of being on the side of the strip and parallel to it, however, the piles are in the center and crosswise of the strip. The piles are on skids to keep them clear of the ground. Bundle yarding starts when a sufficient number of strips have been cut and piled to keep yarding and hauling equipment busy. A yarding unit comprises a yarder and a balancing number of trucks—three or more, depending on the length of the haul. The crew consists of a yarder operator, top loader, bull rope man, hooktenders, chokerman, whistlepunk and truck drivers as required.

The yarder uses the same general method as on tree-lengths: that is, main line for skidding in the piles or bundles; the haulback for returning to the strip, and the strawline for laying out the heavier cables. The A-frame is tilted forward 20-25 degrees. The butt rigging is different from that on tree length in that it need accommodate only two slings instead of a number of short chokers. Usually three sets of two slings each are provided so that the chokerman can pre-choke the next pile while the previous one is being skidded and loaded.

As soon as the slings have been properly placed around the pile or bundle and the signal given, the yarder pulls it in dragging along the ground until it is within a few feet of the A-frame. The yarder then lifts it clear. Meanwhile the truck has been waiting a little in advance of the yarder, and as soon as the bundle is clear and the correct signal given the truck backs under it and the top loader directs its placement on the truck. The truck then advances and the butt rigging returns for another load. From three to five trips by the yarder are required, depending on the size of the piles and of the trucks.

Mr. LeMay lists these two disadvantages to bundle skidding:

1. Since slashers are not used, more manual work is required with the resulting increase in man-days per cord;
2. It does not scarify the ground as well as tree length skidding, although it does scarify it better than manual operations do, at least before snowfall.

Each camp will operate at a radius of about eleven miles and it will not cut more than the annual growth of the area. Caramat and Stevens are well on their way to becoming permanent forest communities, and two other camps have been established with the same end in view.

Cost of road construction in the region averages $6000 to $7000 a mile, with the maximum grade about 5 percent.

Marathon realizes its program will fail if the forest isn't given full scope for regeneration. The fire protection program under Sam Cowan is an extensive one. Jackpine reproduction has been excellent even eleven months after logging. Forestry is given top priority, as Mr. Klinestiver emphasizes: "We're going to be here a long time."

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Personals

NORTHEAST NOTES

GEORGE CLOSSAY, former New England manager of industrial sales for Scott Paper Co., has been named personnel manager of the Port Edward, N.Y., Scott subsidiary mill, according to *DARCY B. WILKINSON*, general manager of both the Fort Edward and the Fort Miller, N.Y., mill, recently bought by Scott.

ARTHUR J. HAUG has been made paper mill superintendent for Scott Paper at its parent mill in Chester, Pa.

JOHN HANKEY has been appointed chemist at Oswego Falls Corp., Fulton, N.Y. He came there from the Institute in Appleton.

ROLAND G. PACKARD has been appointed engineer at Lowe Paper Machinery Corp., Holyoke, Mass. He was with Holyoke Machine.

GEORGE R. ZUST, former assistant manager of *NOPCO* Chemicals Textile Specialties Division, has been appointed sales representative for *NOPCO*.

ARTHUR B. C. DREW, for more than 30 years general superintendent of the paper mill of The Pairpoint Corp., New Bedford, Mass., died April 22. Retiring early in 1940, Mr. Drew continued to make his home in New Bedford.

JEROME L. KIPNIS has been elected executive vice president of National Container Corp., New York. He had formerly been a vice president and assistant to the President, Samuel Kipnis. *LIONEL M. GOLDBERG*, heretofore a vice president and comptroller, was elected assistant to the president as well as vice president. *JOSEPH W. QUARTE*, vice president, was promoted to general sales manager. *SAMUEL D. BASS* was elected comptroller.

CARL E. PAINE, *WARREN J. GOTTEMEYER* and *WESLEY E. MARDEN* have been named to the sales staff of United Board and Carton Corp., Syracuse, N.Y.

ARTHUR PRICE has been appointed vice president of Lesavoy Industries, Inc., according to I. Lawrence Lesavoy, president. Mr. Price was formerly sales manager of Sears Roebucks Mail Order division, later headed his own firm of merchandising consultants. Lesavoy Industries operates paper mills in Cheboygan, Mich., and Newark, O., and a pulp mill in Stevens Point, Wis.

EDGAR E. MORRIS, works manager of Brown Co., Berlin, N.H., died suddenly March 27 at Maine General Hospital, Portland, Maine. In 1912 he joined the old Berlin Mills Co., was promoted to chief accountant. In 1932 he was named superintendent of Brown Co.'s Cascade and Riverside mills; in 1944 he was promoted to works manager, in charge of all manufacturing. He was born in Gorham, N.H., in 1895.

FRANK POTTER, formerly in charge of New York sales of the Westfield River Paper Co., Inc., and its sibsidiary, the Glassine Paper Co., has been appointed assistant to the president, headquarters in Russell, Mass. *RICHARD L. SHANNON*, formerly with Crown Zellerbach, has replaced Mr. Potter as New York manager.

GERALD D. DODD, assistant to the president of Foster Wheeler Corp., will assume charge of manufacturing at the company's Carteret, N.J., and Dansville, N.Y., plants, succeeding William Lonsdale, vice president in charge of manufacturing, who has retired.

Harry Hulmes, 1455 Jericho Road, Abington, Pa., representative of Williams-Gray Co., has been named industrial affiliate representative for Southeast Superintendents.

Glatfelter Officials

Rearrangement of executive direction of Glatfelter Pulp Wood Co. has been effected: P. H. Glatfelter is board chairman; P. H. Glatfelter, III, president and treasurer; P. Koenig, executive vice president and asst. treasurer; Walter G. Schwab, vice president and general manager; D. E. Hess, vice president and assistant general manager; W. S. McClellan, vice president; J. R. Hoke, secretary; and J. L. Myers, assistant secretary. The company has forest acreage below the Mason Dixon Line, serving its Pennsylvania mill. Mr. Schwab makes headquarters at LaPlata, Md.

Macaulay Starts Service For Evaluating Papers

Donald Macaulay, for 15 years district sales manager and "trouble shooter" for S. D. Warren Co., and for five years head of Donald Macaulay Papers, has started a new service—evaluating papers for specific jobs for printers and publishers and also a quarterly syndicate report on grades and brands of printing papers from all mills. The new enterprise, Donald Macaulay Inc., has offices at Chappaqua, N.Y., and labs in New York City.

Syracuse Area Tissue Mill Is Sold

Sale of Sweet Brothers Paper Manufacturing Co., Inc., Phoenix, N. Y., to the Green View Tissue Corp., is announced by R. W. Sweet, president. Sweet Brothers employ about 60 in the manufacture of napkins, wax paper and wrapping tissues, and equipment includes a 92-in. cylinder machine, one 92-in. Harper Fourdrinier, Dilts Hydrapulper, four beaters, two jordans and two Morden Stock-Makers. Capacity, 20 tons a day. Green View maintains offices in New York and has a plant at Putney, Vt.

Stowe-Woodward Execs Support Maine Foundation

Five executives of Stowe-Woodward, Inc., Newton Upper Falls, Mass., have subscribed as individual members to the University of Maine Pulp and Paper Foundation. The Newton Upper Falls rubber manufacturing concern subscribed to a company membership last fall, but five directors recently decided they would like to subscribe personally. They are W. E. Greene, chairman; E. W. Peterson, president; E. L. Tewksbury, F. P. Thornton, Jr., and O. P. Arnold.

EBASCO SERVICES, INCORPORATED, has opened a new enlarged Washington, D. C., office at 1625 "I" Street, N.W.; manager W. B. Cosdon.

JOHN HEGEMAN has been promoted to assistant kraft mill superintendent, Brown Company, Berlin, N.H.

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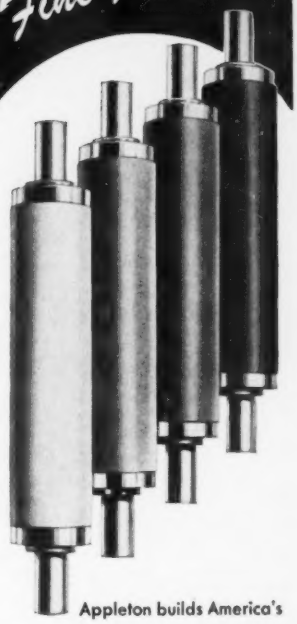

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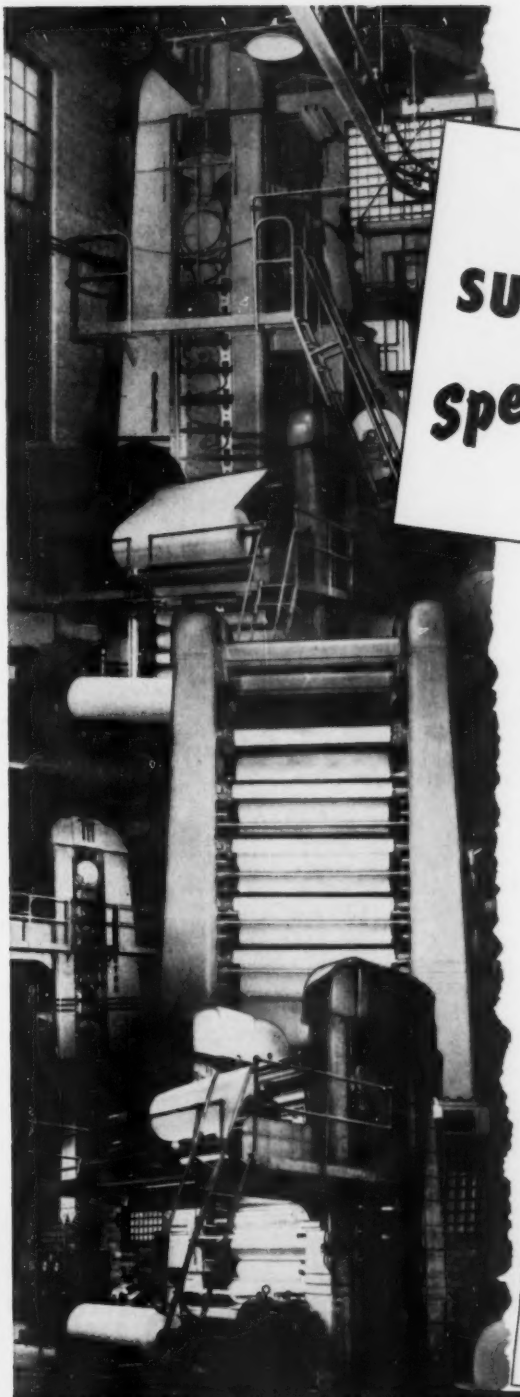

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CORROSION REVIEW

SUGGESTED APPROACHES TO SOLUTIONS

Here is the most comprehensive review of corrosion problems in this industry since the paper by Francis W. Flynn (published page 34, Jan. 1951 issue of PULP & PAPER).

As previously reported, top leaders in this industry have stated emphatically that the great kraft industry of the South is "up in arms" over corrosion. In sulfite as well as alkaline industries, millions of dollars are being invested in uncertain attempts to solve the problem. Canadian mill owners have okayed a $200,000 study—over and above what mills individually are investing.

This paper, given at the Southeastern Superintendents meeting in Richmond, Va., embodies specific answers—based on actual experience—for problems of corrosion in pulp stock and white water handling, in kraft and sulfite pulp mills, recovery plants, bleach plants . . . more specific replies than we have seen set down in one comprehensive discussion before.

By H. O. Teeple

This discussion is an arrangement of thoughts pertinent to the solution of corrosion problems under present day circumstances. As a matter of fact, this discussion might be considered applicable regardless of whether corrosion resisting materials of construction are readily available or not.

The suggested current approach to the solution of corrosion problems can be divided into three parts: (1) Materials of construction, (2) operating conditions or environments, and (3) attitude of mill management.

If one believes the use of stainless nickel or alloy materials, in which shortages have occurred, is a resonable solution to the corrosion problem, it probably would be wise to anticipate one's requirements. Thus when the piece of equipment was no longer useful, the new piece of equipment would be ready for installation. It would seem wise to avoid "over-alloying"—i.e., the use of a metal or alloy which possessed more corrosion resistance than economically required. This would require some practical knowledge as to just how much corrosion resistance may be required for a given situation.

Considering the stainless steel group, type 347 stainless steel is difficult to obtain because of the serious shortage of columbium, an alloying element of extreme value in the high strength-high temperature alloy field. The shortage of molybdenum is evidenced by the fact that type 317 stainless is no longer made and type 316 is made with no more than 2½% molybdenum. The 18-8 steels are in short supply. In view of the large demand for the austenitic steels there has been emphasis on use of ferritic steel, i.e., chrome-iron alloys as alternate to the other stainless.

Considering the nickel and high nickel alloys, the same limited supply situation exists. It also exists for copper and the copper base alloys.

Handling Pulp Stock and White Water

Beginning with the handling of pulp stock and white water, wood, cemented asbestos, copper, 18-8 stainless and Monel have been used, with the trend toward the stainless and Monel.

HERBERT O. TEEPLE, International Nickel Co. corrosion specialist, author of this article. It is slightly edited from paper he gave at Richmond.

Generally the 18-8 (i.e., type 304) stainless steel is quite adequate and represents a reasonable choice. While this alloy does not possess the pitting resistance that type 316 stainless does, it nevertheless is sufficiently adequate to show a useful service life. In pulp stock there is always a strong tendency for fibers to adhere to the alloy. These conditions are conducive to localized corrosion. Thus, if one is tempted to substitute the chrome-iron alloys, either type 410 or type 430 for type 304, one is almost sure to encounter early failure of the ferritic steels due to their notably poor resistance to pitting attack. The point here is that if one is assisting in the conservation of material, the substitution of the chrome-iron alloy would in effect be a waste of material, time, and money, since early failure will almost surely result, requiring another replacement.

Monel, of course, is not subject to localized corrosion, being superior to stainless steels in this respect. Hence, in those cases where stock accumulation is important, perhaps this alloy should be preferred.

In stock handling, there may have been some tendency to use a stabilized alloy, i.e., type 347 for certain pieces of equipment where welding was involved. This alloy may have been specified to permit field erection of equipment without the necessity of post heat treatment. As a matter of probable fact, it is doubtful if type 347 stainless is necessary for use in stock handling for this purpose. Corrosive conditions are seldom severe enough to warrant the specification of this alloy or its equivalent, type 321, or the extra low carbon content type 304.

Corrosion in Bleach Plant

Going to the bleach plant, the corrosion problems arising here are, in general, severe, particularly where chlorine, chlorine dioxide, and hypochlorites are used. Probably the best alloy available for use in conjunction with wet chlorine is Hastelloy C or its equivalent, Chlorimet 3. Both these alloys possess not only a low weight loss corrosion rate but also, more importantly, possess excellent pitting resistance. In many cases, particularly of critical nature, these relatively expensive alloys may easily result in the most economic solution to the problem, even with respect to material conservation.

The austenitic stainless steels and Monel generally are not suitable for wet chlorine. They are not without some application in handling bleached stock of low hypochlorite concentration. The acid resisting bronzes also show limited applicability. Type 316 stainless is the preferred material for covers on bleached stock washers and for caustic extraction stages. Monel is also suitable for the latter. From the standpoint of maintaining stocks of wires, it is probably more economical to standardize on one material. Bronzes also should not be neglected since they also show a fairly useful life.

In the bleach plant 18-8 stainless steels probably represent a poor or uneconomic choice for chlorine or hypochlorite bleach application. They do have considerable utility in alkaline peroxide bleached stock.

Indications are 18-8 steels are suitable also for zinc hydrosulfite bleached stock. However, type 316 stainless should be preferred for handling these strong solutions. Monel and bronzes appear to offer useful resistance in handling these bleached stock.

Corrosion in Recovery Plant

Passing to liquor recovery, corrosion resisting materials have found wide acceptance here. For example, in kraft black liquor evaporators, type 304 stainless has been almost universally accepted for tubes in strong liquor effects. Carbon steel, nickel steel, low chrome steels are not as economically suitable as the 18-8 steels. It is doubtful if higher chrome-irons, i.e. types 410 or 430, would be suitable as

these alloys are poor in resisting corrosion by hot concentrated caustic alkalies. Copper base alloys and Monel are not as suitable as the 18-8 stainless steels. Hence, it appears the best way to conserve materials is to use an alloy known to possess a long service life.

Carbon steel is quite useful for other effects, though marginal in a few instances. Steel tubes which have been chrome-plated outside have found successful application in weak liquor effects. In this case, corrosion occurs primarily from the steam side.

In soda black liquor recovery, Monel is preferred for evaporator tubes in strong liquor effects. Carbon steel has been used. The 18-8 stainless steel tubes do not show economical service. As in kraft, the weak liquor effects can be tubed with steel with expected useful life.

In both soda and sulfate black liquor transfer, it seems wise to prefer corrosion resistant alloys for critical parts, such as pumps and valves. Compromise materials could be used where replacement would not be too inconvenient or costly.

Corrosion in Sulfite Pulping-Recovery

Passing to acid pulping, corrosive environment is essentially one containing appreciable quantities of sulfurous acid. There is considerable interest in magnesium and ammonium base liquors as alternates to the old calcium base liquor. As far as acid pulping corrosion problems are concerned, type 316 stainless has been found to be an adequate economical answer. The 18-8 steels are not satisfactory for hot acid because of the tendency of these alloys toward pitting in such environments. These steels are fairly satisfactory, however, for cold acid. Care should be exercised in use of the 18-8 steels, particularly if welding is involved. In warm acid cooking liquors (not hot) there is a possibility that corrosion in the heat-affected zones adjacent to the welds may occur.

Unfortunately, where hot acid is involved there does not appear to be an economical substitute or alternate for type 316 stainless where a strong ductile metallic material is required.

Semichemical Pulping

Going up the pH scale a bit, we come to neutral sulfite pulping. This is a new pulping process. Corrosion problems in neutral sulfite pulping are associated with approximately neutral sulfurous acid solutions. Generally 18-8 stainless is suitable but at high temperatures type 316 stainless is probably preferable. Copper base alloys and high nickel alloys are not generally useful for high temperature. These alloys should find useful application in handling cooked pulp after washing. There is some indication stainless is preferred for handling pulp from the digester to, and including, the first washer. Once pulp has been washed, these other alloys and stainless steels should be quite useful. There is little demand for a color-controlled neutral sulfite pulp. Hence demand for corrosion resisting alloys may not be so great—perhaps carbon steel could be used.

Uses for Other Materials

Regarding use of other materials of construction for the mitigation of corrosion problems, a number merit consideration.

Certain applications will permit use of non-metallics, such as ceramics, carbon or graphite, glass, wood, and cemented asbestos.

Many times paint systems can be used to advantage. Reputable paint manufacturers usually are in a good position to assist.

This same situation exists in the case of the field of plastics. Many times a plastic can be successfully employed.

200 ATTEND SUPERINTENDENTS MEETING IN RICHMOND, VA.

Some 200 members of the industry and suppliers, attended the two-day spring meeting of the Southeastern Division, American Pulp and Paper Mill Superintendents Assn., in Richmond, Va., May 4 and 5.

Papers included: "Corrosion in the Pulp and Paper Industry," H. O. Teeple, International Nickel Co., Inc.; "Handling Pulp and Paper Products with Conveyors," W. R. McNally, Link-Belt Co.; "Testing of Corrugating Medium," R. C. McKee, Chief, container section, Institute of Paper Chemistry; "Infra-Red Heating and Drying," Dr. Geoffrey Broughton, head of Paper Engineering Dept., Lowell Textile Institute; and "Pulpwood Procurement in the Southeast," J. Herschel Keener, Manager Woods Dept., Chanton Division, The Champion Paper and Fibre Co.

Other activities included a short business meeting of the division; a visit to the rayon plant of E. I. du Pont de Nemours & Co., Inc.; and golf.

PULP & PAPER'S VIEWS AT SUPTS. MEETING in Richmond, Va. Top row (l. to r.): J. Herschel Keener, President of Southern Pulpwood Conservation Assn. and Manager of Woods Department, Canton Division, The Champion Paper and Fibre Co., who talked on Pulpwood Procurement; Mr. and Mrs. Howard S. Donald (Mr. Donald is President of Standard Paper Mfg. Co., Richmond, and delivered luncheon address); Fred Keyes, J. P. Ward and J. Guy Watson, of North Carolina Pulp Co. Lower row (l. to r.): Leon E. Savage, chief engineer, Standard Paper Mfg. Co. discusses infra-red heating with Dr. Geoffrey Broughton, professor and head of the department of paper engineering, Lowell University, who delivered paper on subject; R. C. Stewart, Shartle Bros. Machine Co.; A. C. Reece, Buckman Laboratories Co.; Harold Wood, Jr., and John D. Robinson, both of Hepponstall Co., and Charles Kelley, Jr., of H. & T. McCluskey & Sons.

Changes in Operating Conditions

We now come to the second of the three major current approaches to corrosion problems, that is, changes in operating conditions or environment.

This approach can lead to many benefits if one proceeds in a reasonable fashion. For example, perhaps the pH value of the white water does not need to be as low as it is, perhaps the temperature could be lowered.

If copper, bronze, brass, Monel are being used in low pH stocks or white waters, perhaps a lesser degree of aeration could be used. If stainless steel is used, perhaps some improvement could be achieved through increased aeration. In the case of stainless steels, one could watch for unusual concentrations of chlorides. Perhaps agitation could be increased to minimize the adherence of stock fibers to the stainless. One could watch for unfavorable galvanic couples and crevices.

Cleanliness is an important factor and if properly investigated and pursued should alleviate problems.

Another procedure which should lead to useful conclusions is frequent inspection of equipment to catch trends to failure before they occur.

If the equipment is found to need repair, the important thing is to make these repairs, using good practice and/or techniques. For example, repairs by welding and exercise of proper procedures for the metal or alloy in question.

Recognition by Management

The third approach to the solution of corrosion problems is an important one. It is one which fortunately is being followed by more and more mills. This is the acknowledgment by management that corrosion problems can and do exist. Many mill managements are cognizant of this fact and have been aggressive in setting up adequate programs for control.

QUESTIONS-ANSWERS ON CORROSION

(Following is the complete discussion which followed the presentation of Mr. Teeple's paper):

QUESTION: Has nitric acid been used to passivate sulfate carbon steel digesters as a means of controlling corrosion?

ANSWER: I do not know. It is true that clean carbon steel can be passivated by concentrated cold nitric acid. However, in order for this film to be effective, the conditions prevailing in the digester after passivation of the carbon steel should be such that the passive film will not be destroyed. Even further, conditions should be such that the effectiveness of the fill will be maintained. Under specific conditions outlined in the question, it is extremely doubtful that nitric acid passivation of carbon steel will prove to be effective since the conditions are such that the film would tend to be destroyed.

Q: What is the basis for your remarks to the effect that the ferritic stainless steels would find little use as tubes in sulfate black liquor recovery evaporators?

A: Principally, on the basis of our experience with the 4-6 chrome-iron alloy tubes in the strong liquor effects, and

(Continued on Page 102)

INSTRUMENTATION UNDERSCORED

If you care to take the word of some instrument department heads for some of the largest companies in this industry, who have read or heard about everything written on their subject for a decade or more, the best instrumentation meeting ever held on the North American continent for pulp and paper took place at Harrison Hot Springs, B.C., Apr. 27-28.

It happened to be the Pacific Coast branch spring meeting of the Canadian Technical Section but it drew many instrument men from south of the border when they heard that three of the five technical sessions would be devoted to this one subject.

The reason? These alert Canadian sponsors recognized management is spending many times more money these days on push button controls and instruments than was the case a comparatively few years ago—7% of the investment in a new mill is nowadays in instruments, said one speaker. Mills are spending money on staff also—they have their own instrument divisions and staffs. Consulting firms, too, have their instrument experts. Formerly, the sales engineer laid out the instrument installations alone, and he rarely could have the answer to a mill's particular problems or conditions. Trial and error was the routine—now the right instrument system can be installed more often at the start.

J. G. Ziegler, Taylor Instruments coast expert from San Francisco, and Gerry Wheeler, who is credited with having done one of the outstanding instrument layouts in the industry for Powell River Co., before leaving that company to become Mason-Neilan's man in west Canada, gave two outstanding talks on broad, fundamental lines. Others, on more particular subjects, were M. E. Minaker, branch manager for Minneapolis-Honeywell Regulator Co. at Vancouver, B.C., who outlined some advantages of thermocouple systems over resistance thermometers; Neil Blair, pulp and paper specialist from Bristol Co., Waterbury, Conn., who talked on pneumatic operated controllers, and A. Padget, Foxboro Co.-Peacock Bros., who discussed pneumatic transmission.

Recognized as one of the outstanding control men in all U.S., Mr. Ziegler told of the pitfalls in controls, the effects of variables and stressed logical approaches to reasoning out instrument problems and held that problems are not as complicated as they often appear. His remarks were extemporaneous, with blackboard demonstrations. He simplified many points for his audience.

Mr. Wheeler underscored the importance of pneumatic control or diaphragm-operated valves as part of the control system—"actually part of the instrument," he said. He explained the terms of rangeability of valves and stressed intelligent selection. The first applications of valves in control, he recalled, was in 1906 with George Westinghouse holding first patents. He noted that low air pressures have always been used over the years, with standardizing of operating pressures.

He talked of by-passes on control valves, how it is important to know this robs a control valve of part of its function, which many plant people do not consider. The valve is not working the same as it did before the by-pass.

Mr. Padget described the new multi-record pneumatic receiver which could be used in conjunction with console type recorders. He pointed to flexibility, distance and simplicity as advantages of pneumatic transmission—distance being unusually excellent in other than electric transmission, with practical application up to 1200 ft. One mill instrument chief present said pneumatic transmission is a good medium for corrosive atmosphere.

Mr. Minaker talked about pyrometers. He gave a good presentation of applications and ranges, effects of heat transfers on bulbs and thermocouples. Most important advantage of the thermocouple system over resistance thermometer is better reproducibility and accuracy. Economy and ease of application of the former also was noted. Resistance thermometers were favored for suppressed ranges or narrow spans.

Mr. Blair, most of whose practical experience has been with Southern kraft mills in chemical and petroleum fields, described various pneumatic operated controllers. Generally, he said, three standard control actions were being offered the industry under various trade names, but he suggested that control in-

(Continued on Page 102)

PICTURES BY PULP & PAPER at the Harrison Hot Springs meeting of Pacific Coast Branch, Canadian Technical Section—acclaimed by some veterans of the field as having included in its program the best instrumentation sessions ever held in East or West of the Continent. Top row (left to right): W. A. BAIN, new Manager of Woodfibre mill of B.C. Pulp & Paper Co. (Abitibi); R. LOGAN MAYHEW, Vice President of Sidney Roofing & Paper Co., principal guest speaker; JOE ASKEW, Chief Engineer, Bloedel, Stewart & Welch, and G. K. WATE, Technical Service, Powell River Co., who spoke on recovery and digester problems, respectively. Second row (left to right): M. F. SMITH, First Vice-Chairman, Technical Section, Western Branch; W. R. DICKIE, AIM Steel Products, retiring Secretary-Treasurer; MORLEY PATTERSON, Kraft Superintendent, Pacific Mills, new Chairman; JOHN GUTHRIE, B.C. Pulp & Paper Co., retiring Chairman. Third row (left to right): M. E. MINAKER, Brown Instrument Co.; A. PADGET, Foxboro Co.; J. G. ZIEGLER, Taylor Instrument Co.; MARION F. SMITH, Chairman of Instrumentation Panel; HERBERT T. PETERSON, Weyerhaeuser Pulp Division's Instrument Department Chief, Longview, Wash. Fourth row (left to right): NEIL BLAIR, Bristol Co.; AL CHARD, Development Engineer, Powell River; LES HOBBY, B.C. Pulp & Paper Co. Instrument Engineer, and GERRY WHEELER, Mason-Neilan Co.

Personals

CANADIAN NOTES

NEW VICE PRESIDENTS for Powell River Co. are *RUSSELL M. COOPER*, resident manager at Powell River; *I. H. ANDREWS*, formerly executive assistant; *JOHN E. LIERSCH*, formerly assistant vice president, and *JOHN A. KYLES*, formerly comptroller, all of Vancouver, B.C. *H. JOHN BURNS*, formerly treasurer of Sorg Pulp Co., who joined Powell River Co. when the Port Mellon mill was temporarily closed down, has been promoted to comptroller. Mr. Cooper joined the company as general superintendent in 1946. Mr. Andrews has been with the company over 30 years. Mr. Liersch was formerly head of the forestry department, University of B.C.

MAJ. GEN. HARRY F. G. LETSON, C.B., C.B.E., E.D., M.C., has been appointed to the board of Powell River Co. He has been prominent in Western Canadian engineering.

BEN F. AVERY (left) elected President of KVP Co. Ltd., Espanola, Ont., succeeding the late Ralph Hayward, and F. NORVAL HUNTER (right), elected Vice President of the Canadian subsidiary of Kalamazoo Vegetable Parchment Co. Mr. Avery was General Manager; Mr. Hunter was Manager of Manufacturing. Chairman of the Board is ALFRED SOUTHON, who succeeded Mr. Hayward as President of the American company in Parchment, Mich.

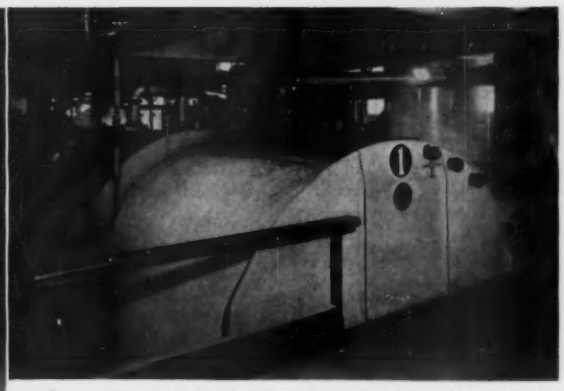
J. GORDON CHALMERS, manager of manufacturing Bathurst Power & Paper Co., Bathurst, N.B., has been elected to the board of directors.

W. A. BAIN, for many years chief engineer of the Woodfibre mill of B. C. Pulp & Paper Co., has been appointed resident manager, succeeding *E. P. BRENNAN*, retired.

DOUGLAS W. AMBRIDGE and *ROBERT L. RIPLEY*, New York financier, went to Vancouver, B. C., late in April to participate in the annual meeting of B. C. Pulp & Paper Co. when financing of the new Alaska Pine & Cellulose Co., which is to take over the B. C. Pulp mills and integrate them with the Alaska Pine lumber and timber interests, was advanced. Mr. Ambridge, president of Abitibi Power & Paper Co., Toronto, will be chairman of the board of the new company.

YOSHIZO SHIMAMURA, president of Kokusaku Pulp Industry Co., Tokoyo; *M. OYAMA*, chief engineer, and *O. SHIMA*, secretary, visited the H. R. MacMillan Export Co's pulp mill near Nanaimo, B.C. and other west coast mills during a flying visit to New York and Ottawa, returning via San Francisco. Main purpose of the trip was to buy equipment.

Washes Sulfite Pulp – 2 stages on 1 drum



Swenson-Nyman Pulp Washers of the type used for sulfite pulp

The diagram at left illustrates a sectional view of a Swenson-Nyman Pulp Washer, and the valve arrangement for maintaining separation of strong and weak sulfite liquors. Pulp emerges well washed at high consistency; with less dilution, thus reducing evaporation costs.

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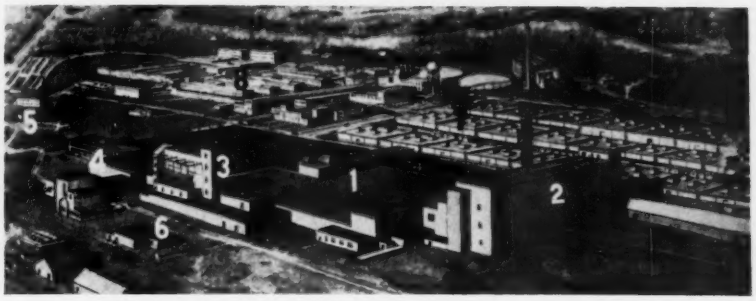
OLIN-ECUSTA DEVELOPMENTS

NEW CONSTRUCTION AT PISGAH FOREST SHOWN

JOHN M. OLIN (left), was recently elected Chairman and JOHN WESLEY HANES (right), was elected President of Ecusta Paper Corp., Pisgah Forest, N. C., a subsidiary of Olin Industries. Mr. Olin is President of Olin Industries, East Alton, Ill. Mr. Hanes was a former Under Secretary of Treasury (1938-1940) and as a young man was a tobacco company salesman. Ecusta is famed for its cigaret papers, and under Olin management is now adding a cellophane division.



ARTIST'S SKETCH OF NEW CELLOPHANE PLANT being built by Ecusta Paper Corp.—Olin Industries at Pisgah Forest, N. C., and the familiar Ecusta cigaret and fine paper mill appears in background. The 8-machine cellophane plant using DuPont patents is due to start up in September. Shown in this sketch are: 1—Casting Area, with Hopper Grinding Room in low building in front. 2—Five-story Chemical Building, with Viscose Ripening Room at near end. 3—Six-story Coating Towers and Laboratory. 4—Solvent Recovery Bldg. 5—Office Building. 6—Coating Bath Mix House. 7—Ecusta Paper Mill Warehouses and wood pulp storage at extreme right. 8—Ecusta Paper Mill which houses numerous tiny Black-Clawson cigaret paper machines, the little beaters, etc., used in process. Ray Bennett, former Gen. Supt. for Ecusta, was sent to Clinton, Iowa, to observe Dupont cellophane process and he was in charge of new construction.

On this page appears a sketch of the new Olin-Ecusta cellophane plant being built alongside Ecusta Paper Corp., Pisgah Forest, N.C., with units of the new factory exclusively identified for PULP & PAPER readers, as shown.

This plant, with eight small cellophane machines making 33,000,000 pounds annually, is expected to go into production in September, substantially increasing production of that commodity. The plant consists of one main 300 by 900 ft. building with eight smaller outlying units. Parts of it require strict temperature and humidity controls. Dissolving wood pulp is the raw material to be used.

Meanwhile, John M. Olin, president of Olin Industries, has been elected chairman of Ecusta Paper Corp., Olin subsidiary, and former Under Secretary of Treasury John Wesley Hanes, president. They succeeded to positions formerly held by the late Harry Straus, who brought the cigaret making process introduced at Ecusta to this country from France, using Minnesota flax. Ecusta later went into air mail and fine paper production. Cellophane likewise is a French importation.

Thomas M. Word was elected vice president of Ecusta; N. H. Collisson, vice president; Philip C. Brownell, vice president and secretary; R. G. Deyton, treasurer; and Lee M. Bauer, assistant secretary. Mr. Bauer is paper mill manager.

Directors of Ecusta are Mr. Bauer, Mr. Collisson, Mr. Hanes, John M. Olin, Spencer T. Olin, Fred Olsen, Harry H. Straus, Jr., E. W. Taft and Mr. Word.

Olin's Background

John M. Olin is the elder son of F. W. Olin, founder of the various Olin enterprises, and became president of Olin Industries, Inc., on its formation in 1944, as a result of the merger of the Olin Corp. and Western Cartridge Co. Mr. Olin had previously been first vice president of Western Cartridge. He graduated from Cornell in 1913 as a chemical engineer.

Hanes' Career

Mr. Hanes was also elected a vice president and director of Olin Industries, Inc., and appointed to its executive committee. He has been chairman of the executive and finance committee of the U. S. Lines Co., foremost American steamship operators. He is a director of Johns-Manville and of Bankers Trust.

Mr. Hanes was born at Winston-Salem, N.C., received his early education at Woodberry Forest School, Orange, Va. He was graduated from Yale in 1915 and received an LL.D. degree from Duke University. His first job was salesman for the American Tobacco Company in 1915 and 1916. He served as an ensign in the U. S. Naval Reserve from 1917 to 1919, and in 1920, joined the financial firm of Chas. D. Barney & Co. of New York as a bond salesman. He became a partner in 1922, and was senior partner from 1929 through 1937. On Jan. 1, 1938, he was appointed a commissioner of the Securities and Exchange Commission and on July 1 of the same year, he was appointed assistant secretary of the treasury. His appointment as under secretary was from Nov. 1, 1938, to Jan. 1, 1940.

ROBERT AND COMPANY ASSOCIATES
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Consulting and Design Engineers to the
PAPER AND CHEMICAL INDUSTRIES
HAROLD R. MURDOCK, *Chemical Engineer*
PROCESS STUDIES • DESIGN • POWER PLANTS • INDUSTRIAL WASTE DISPOSAL

NEW MACHINE AT FINCH, PRUYN

COATING PRESS SECTION FOR PRINTING PAPERS

One of the first "war production paper machines" started rolling last month at Finch, Pruyn and Co., Inc., Glens Falls, N.Y., and, equipped with integral sizing and coating press, is turning out 75 tons daily of high grade printing papers as compared with the 50 tons which the replaced machine was capable.

It can be termed a war production machine because it was ordered in the late Spring of 1950 when the industry, aware that mobilization was stepping up and a materials problem imminent, signed up for machines which will increase U. S. paper output by many thousands of tons. However, the new 122 in. (wire) Pusey and Jones Fourdrinier had already been planned as a part of Finch, Pruyn's modernization.

"A major step in our modernization," is the way Lyman A. Beeman (shown in picture), president, characterized the equipment costing over a million dollars. "It makes the mill more efficient and flexible in full-time operation for our regular markets."

Those regular markets are not the same as when Finch, Pruyn was founded in 1904, or even just prior to the election of Mr. Beeman to the presidency (upon leaving St. Regis Paper Co., where he was a top executive in charge of manufacturing) for the organization was strictly a newsprint operation. A few years ago PULP & PAPER took Finch, Pruyn as an example of a happy ending to the fate of U.S. newsprint and the upper New York State industry in particular.

The traditionally designed mill buildings high on solid rock above the river might today be as deserted as Cooper's Cave, the picturesque formation across the stream made famous by the author of that name, but an alert ownership, under leadership of chief engineer R. I. Wynne-Roberts, prevented that. They decided on a line of groundwood specialties, as far from the newsprint world as may be imagined. It means a difficult, costly change. No trouble with the Soviet was in the planning then.

"But the new machine is as suitable to what would probably be our job in war-time as it is to the normal competitive market," Mr. Beeman said. And he expressed regret that Harry Bullard, vice president, long with the company, was not to see full fruition of the planning. Mr. Bullard died suddenly just prior to a scheduled "open house" which was to have given Glens Falls townspeople an early view of the machine.

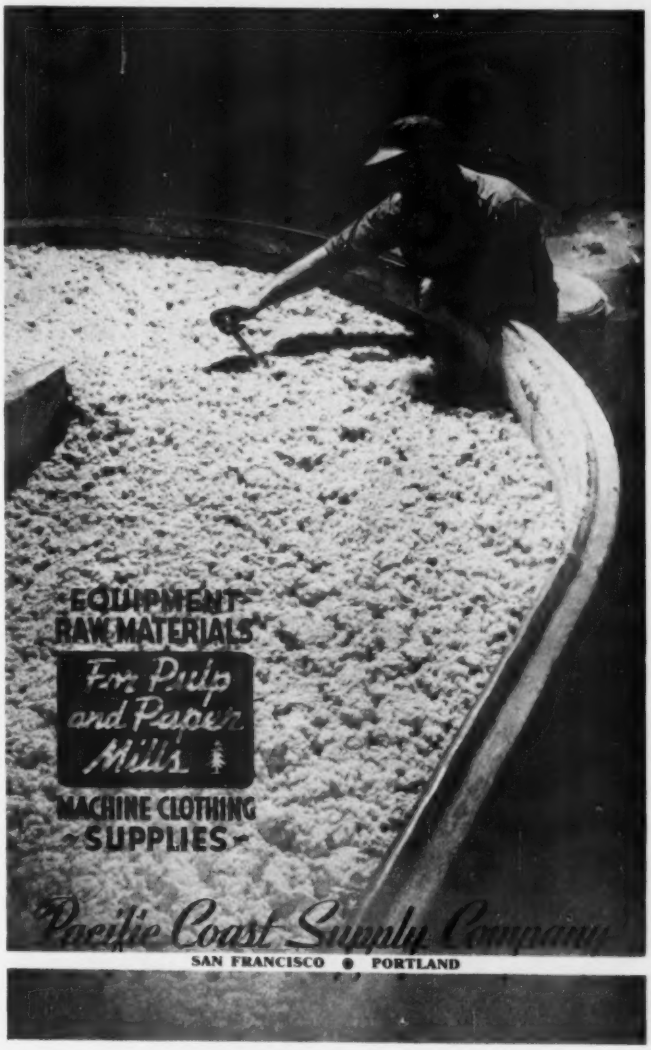
Adding to flexibility of the machine which Pusey & Jones built in a little over eight months is a compact steam turbine which replaces the old Corliss steam engine. The latter was removed and the new Fourdrinier installed in six weeks, the work being done by Finch, Pruyn employes with the help of Puseyjones engineers and collaboration of the Glens Falls construction firm of Waggaman and Collyer.

Machine Description

On the new machine is a headbox arranged for attachment direct to screens and combined with a 60-inch high fully adjustable slice and all stainless steel construction.

The Fourdrinier section is suitable for a 75-ft. by 122-in. wire and is equipped with a 30-in. diameter Downingtown suction couch, stainless suction boxes, 18-in. dandy roll, rubber-covered table rolls, brass jacketed wire rolls, high-speed duplex shake, 3-in. permanent pitch wire table. Breast roll is air-operated. Water piping and showers are all copper and brass.

The press section is of the improved close-spaced design with two 24-in. rubber-covered Downingtown suction presses, and granite upper rolls. There is pneumatic-controlled pressure loading and Scofield felt conditioners. The wet and



"Re-examination"

has a special meaning in 1951

Before contracting for corrosion resistant linings, stock chests and other chemical process vessels, examine the policy of the company offering to do the job.

Stebbins 1951 policy is the same as established in 1884—

QUALITY · RELIABILITY · SERVICE

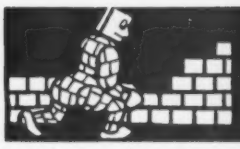
BY QUALITY—we mean the correct materials to do the job successfully.

BY RELIABILITY—we mean expert workmanship to assure long time dependable service.

BY SERVICE—we mean continuing interest in the job after installation is completed assuring trouble-free profitable operation.

It has always been the policy of Stebbins to offer its (one contract—one responsibility) service on a just, reasonable and equitable basis.

There never has been or ever will be a substitute for the "Know-how" of a dependable and trustworthy organization.



SEMCO

Stebbins Engineering Corporation

TEXTILE TOWER SEATTLE 1, WASHINGTON

smoothing press has 24-in. diameter bronze cased lower and 24-in. diameter rubber covered upper rolls.

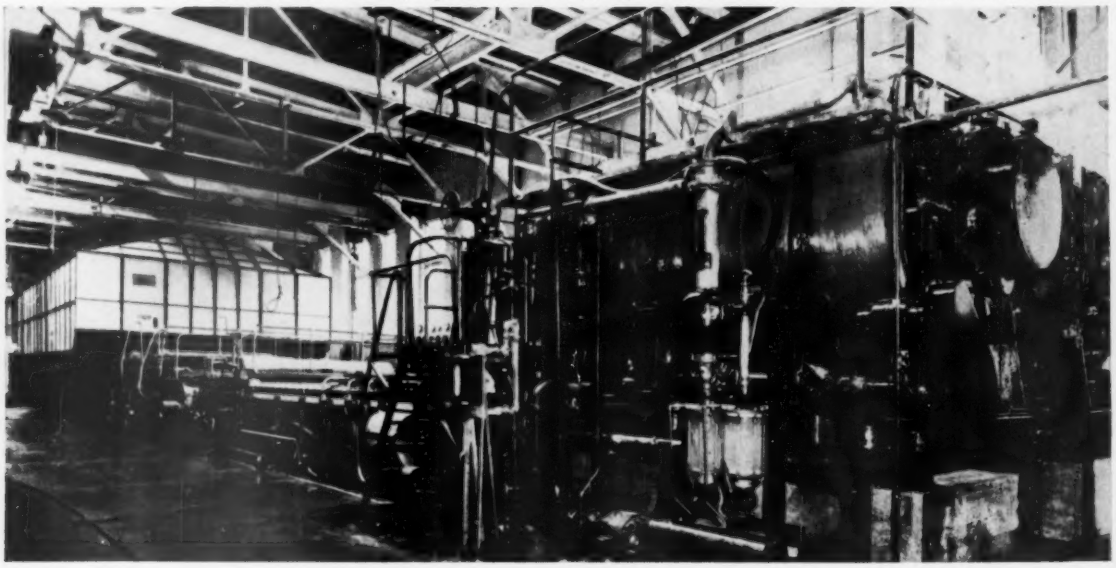
The dryer part is in three sections, upper and lower felt on each section. There are 14 paper and four felt dryers in the first and second section, while the third section carries 11 paper and two felt dryers. All are 48 inches. There is Bowser lubrication for the main dryer and its shaft bearings. Other features: Rope carrier for threading sheet through dryer sections: late type steam joints with dual revolving siphons; supporting framework of streamlined box pattern; high tensile alloy gearing with steel guards.

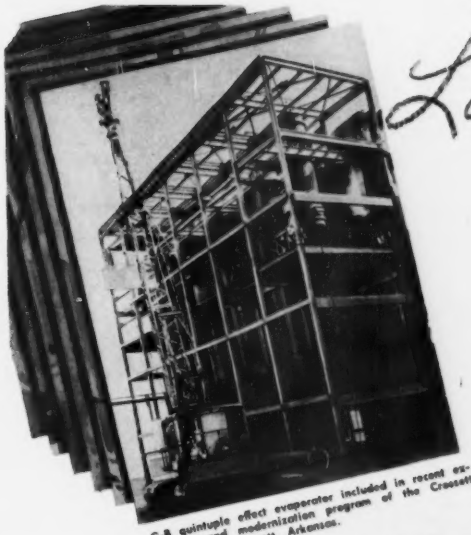
The size press has a 24-in. chromium plated lower roll and 24-in. diameter rubber covered upper roll with stainless size pan, brass showers, and special Mount Hope adjustable spread roll. The calender stack has Bowser oiling for all roll bearings, pneumatic nip loading, and Lodding doctors. Improved type Pope reel has pneumatic adjustable loading mechanism and adjustable spreader to handle rolls up to 48 inches in diameter. The unwinding stands have adjustable bearing supports and electrical regenerative brake.

The Puseyjones two-drum winder has new features.

Stowe Woodward, Inc., did an extensive job of rubber-covering, covering 78 in all —the upper size press, upper smoothing press and two suction press rolls as well as 49 table rolls, seven tie rolls and one paper roll.

NEW PUSEY & JONES Fourdrinier machine at Finch, Pruyn Mill at Glens Falls, N. Y., viewed from wet end. Bird Machine Co. screens at wet end.





G-B quintuple effect evaporator included in recent expansion and modernization program of the Crossett Paper Mills, Crossett, Arkansas.

Look to GB for Evaporators

of Maximum Capacity and Economy

In recent mill expansion and modernization programs G-B has played a leading role in evaporator design and fabrication. G-B's experience and design engineering background assure the utmost in economy and performance for new evaporator installations.

In designing evaporators for maximum operating capacity, special attention is given to highest practical steam economy with minimum losses due to entrainment. G-B engineers are at your service any time for discussion of your evaporator problems.

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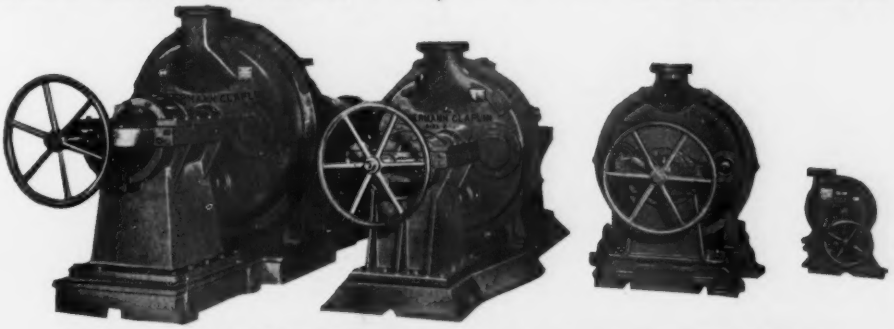

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PRE-REFINING AND DEFIBERING WITH MINIMUM CUTTING

THE HERMANN MANUFACTURING CO.

Also: TAPPI Standard Pulp Testing-Sheet Making Apparatus

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Personals

MIDWEST NOTES

COLA G. PARKER, president of Kimberly-Clark Corp., Neenah, Wis., told a teachers' meeting there that "an even greater America" can be achieved by a "dynamic partnership" of industry and education. He said there must be more than lip service to American principles.

CHARLES E. NELSON, president of Mac Sim Bar Paper Co., Otsego, Mich., died in April. He is a past president of the National Paperboard Association, was formerly with Eddy Co., Three Rivers, Mich., and at Otsego since 1921.

L. B. SMITH, great grandson of the founder of the A. O. Smith Corp., Milwaukee, became its president by action of the firm's directors. He had been vice president since 1945. Mr. Smith's father, L. R. Smith, was president of the company from 1913 until 1936 and chairman until his death in 1944.

LEN MEYER, material department superintendent, Kimberly-Clark, Kimberly, Wis., mill, in a recent talk on safety, said more Americans were killed in one month in auto accidents than in six months in Korea, and that U.S. ranked 34th in 36 nations for per capita accidental deaths.

FORREST W. BRAINERD is now vice president and plant manager of Falls Paper and Power Co., a Scott Paper subsidiary in Oconto Falls, Wis.

KENNETH P. GEOHEGAN, national president of TAPPI and vice president and technical director of Aetna division of Howard Paper Mills, Dayton, O., underwent an operation in Dayton the middle of April. A convalescent period of four weeks, or more, was expected.

TOM DITTER, engineering department, Thilmany Pulp & Paper, Kaukauna, Wis., left for army service, reporting to Fort Sheridan, Ill.

DAVID R. ARNOLD, Middletown, O., has been appointed to the position of director of management planning for The Gardner Board and Carton Co., announced E. T. Gardner, Jr., vice president, finance. With Gardner since April 1950, Mr. Arnold has been internal auditor, handling management planning. He is a graduate of Knox College, Galesburg, Ill., and received his master's from Harvard. He served as management consultant with A. T. Kearney Co., Chicago, and was with Allis-Chalmers and Price Waterhouse.

ROBERT E. YOUNG has been elected a director, and *JAMES C. MORRIS* as vice president of production of Ohio Boxboard Co., Pittman, Ohio. Robert Young replaced his father, Don Young, on the board. Mr. Morris has been with the company 14 years, during which time he served as manager of research and development and production manager.

WILLIAM FAWCETTE, chemical engineer in the materials engineering department of Marathon Corp., Menasha, Wis., has been called to active duty in the army and reported to the Pentagon at Washington, D.C. Mr. Fawcette is a first lieutenant in the army reserves.

SUPERINTENDENTS OF MIAMI VALLEY—in Ohio, and their friends met 135 strong at Middletown, O., April 19 for a regular meeting and to hear also BENNETT CHAPPLE (top left) Asst. to the President of Armco Steel Corp.
Others in top row (l to r): WILLIAM MACKLEM, retired veteran Black-Clawson Engineer; HARRY HADLEY, Middletown Mill Mgr. for Gardner Board & Carton and Supts. Vice Pres., and DR. DUNCAN S. BROWN, Lockland (Cincinnati) Mill Mgr. for Gardner.
Middle row (l to r): B. H. BINDLEY, Cheney Pulp & Paper Production Mgr. and 1st Vice Chairman of Miami Supts; L. M. NEWMAN, Chief Engr., Crystal Tissue, and Secretary of Supts. Div.; JOHN BURDSALL, Asst. Supt., Crystal, and Chairman of Supts.; and B. L. MERRISS, Oxford Paper, 2nd Vice Chairman.
Lower row (l to r): WILLIAM REIGERS, Finishing Supt., Beckett Paper; WILLIAM WHITE, Sales Engr., Shartle Bros., and GEORGE LYDICK, Plant Engr., Beckett Paper.

D. H. KECK, Midwest district representative for Kimberly-Clark Corp., has joined the staff of the Office of Price Stabilization as section head of groundwood and book paper. During Mr. Keck's temporary absence from Chicago G. L. DuBois will act as Midwest as well as Southern representative.

HARVEY W. CLEMENTS, manager of the Chicago General Sales Division of the Bemis Bro. Bag Co. since 1930, died April 11 at Chicago, after an illness of about three weeks.

HAROLD H. HELLER, Appleton, Wis., who has been chief of the chemical section of the Kimberly-Clark Corp., staff, manufacturing department, in Neenah, Wis., has joined the National Production Authority in Washington, D.C., as assistant to G. J. Ticoulat, chief of the Pulp and Paper Section. His assignment will have primarily to do with control and procurement of chemicals for pulp and paper.

LINK-BELT SPEEDER CORP. announces appointment of *N. V. (NORB) CHEHAK* as district representative for Washington, Oregon, Idaho, Montana, British Columbia and Alberta. He will assist distributors on sales and service of Link-Belt Speeder Shovel-Cranes.

FOR SALE

156-inch Fourdrinier Paper Machine.

No reasonable offer refused. Complete with 2 presses, including 2 brass tube rolls, 15 felt carrying rolls, worm rolls, 2 press doctors, etc., etc. Parts for Fourdrinier consisting of 2 raising stands for suspended rail, all rails and complete attachments, beams, plates, trays, etc., etc.

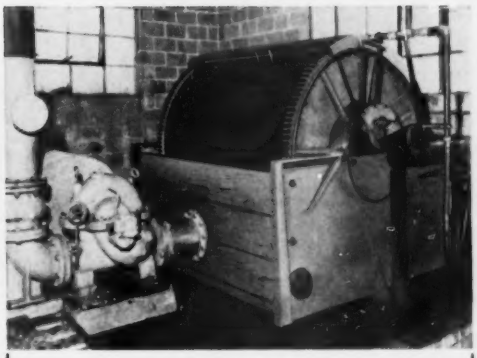
Complete inventory of Fourdrinier and parts will be given upon inquiry. Equipment available for immediate delivery. Machine has been run at a speed of approx. 850 ft. per minute. Particularly suitable for manufacturing newsprint.

Please

reply to P&P Box No. 93, c/o PULP & PAPER, 71 Columbia St., Seattle 4, Wash.

WANTED

FOR FOREIGN USE CYLINDER PAPER BOARD MACHINE 84" TRIM OR BETTER, 30 to 60 TONS PRODUCTION AND AUXILIARY EQUIPMENT. ADVISE IF IN OPERATION OR ASSEMBLED FOR INSPECTION. PLEASE REPLY TO P&P BOX NO. 94, c/o PULP & PAPER, 71 COLUMBIA ST., SEATTLE 4, WASHINGTON.



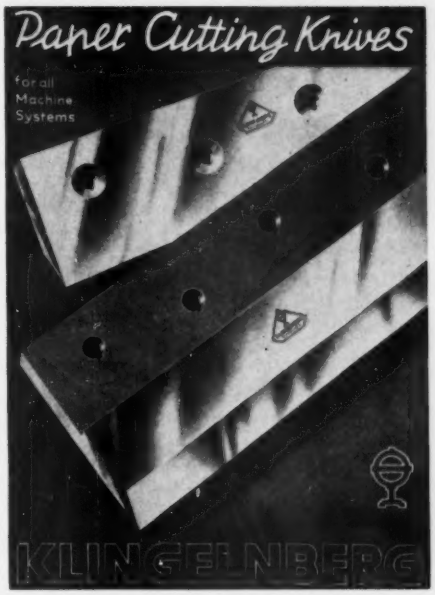
For filtering its fresh water supply, Columbia Cellulose Company selects the "NORTH" Water Filter, pictured above.

Four of these **"North" Rotary Water Filters**—5 ft. x 8 ft. are used in parallel removing debris and foreign matter from 25,000,000 gallons of water per day at **Columbia Cellulose Company's** new mill at Watson Island, British Columbia.

This is only one of a hundred such installations over the past 30 years made by

GREEN BAY FOUNDRY & MACHINE WORKS
Green Bay, Wisconsin

Paper Cutting Knives
for all Machine Systems



No steel restrictions—an additional source of supply for you—A trial order will prove to your satisfaction that no better knife can be made—100 years devoted to making knives.

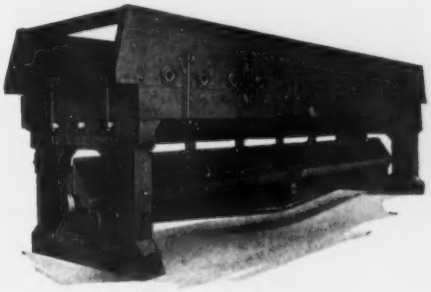
Exclusive Pacific Coast Agents
HEYER SALES & ENGINEERING CO.
1003 Washington Bldg. Tacoma, Wash.

WATEROUS SINCE 1844

Congratulations to

COLUMBIA CELLULOSE COMPANY, LTD.

We have had the pleasure of supplying **WATEROUS** wooden vat type flat screens exclusively for their new mill.



Waterous screens are vibrationless, noiseless—have no connections to become noisy with wear. All parts are easily accessible for maintenance. The bridgetree contains the oil which automatically lubricates the screen. Vats and flow boxes are made from everdur, bronze, cypress, or steel.

Write for further information.

WATEROUS LIMITED
BRANTFORD ONTARIO CANADA
BRANCH PLANTS AND OFFICES
EDMONTON ALBERTA CALGARY ALBERTA

Personals

SOUTHERN NOTES

EDWIN H. GRAVES, manager, Hummell-Ross Division, Continental Can Co., Hopewell, Va., addressed the Virginia State-Wide Safety Conference at Norfolk recently on "Management's Responsibility in Accident Prevention." *GEN. LUCIUS D. CLAY*, chairman of the board, Continental Can, returned to his civilian duties after serving as assistant ECA administrator in Washington.

J. L. CAMP, JR., president, Camp Mfg. Co., Franklin, Va., and vice presidents *J. M. CAMP*, *HUGH D. CAMP* and *WM. CAMP* were hosts to visiting business men from Norfolk, Suffolk and Richmond, Va., April 30. Visitors were taken on a tour of Camp's lumber and pulp and paper operations.

THOMAS T. GUY, a graduate of Virginia Polytechnic Institute, has joined cellulose products engineering of Hercules Powder Co., Hopewell, Va.

K. F. ADAMS, resident manager, Halifax Paper Co., Roanoke Rapids, Va., has been seriously ill.

E. C. COBB is now the Homelite chain saw representative in Louisiana and south Arkansas, making headquarters at 1106 N. Second St., Monroe, La.

TOM HANDLEY, for over 23 years Southern representative of Ohio Knife Co., Cincinnati, Ohio, died at his home in Macon, Ga.

MARVIN L. CLEATON, JR., was named manager of the new Foxboro Company office at 618 West Church St., Knoxville, Tenn. Knoxville territory was formerly covered by the Atlanta office.

JOSEPH T. HOLLEMAN has been named manager of the new office opened in Chattanooga, Tenn., by Signode Steel Strapping Co. The office will service north Alabama, north Georgia, east Tennessee and east Kentucky.

WILLIAM T. WEBSTER, vice president and general manager of National Container at Jacksonville, Fla., has been elected a director of the company.

W. H. BECHTEL is now chief chemist at Flintkote Company's mill at Meridian, Miss. In the same mill, *DAVID SHARPE* has been named master mechanic and *A. E. EZELLE*, shipping foreman.

J. M. PALMER, purchasing agent for Crossett Paper Mill, Crossett, Ark., is now P.A. for the paper mill, lumber mill, chemical plant and Tri-State Supply Co.

JOHN K. SULLINS is now pulp mill superintendent at The Mead Co., Nashville, Tenn., mill. *H. I. MOORE*, formerly pulp mill superintendent and chief engineer, is now shown as power superintendent and chief engineer.

JOHN A. PETERSON, formerly plant engineer at Kimberly-Clark Corp., Memphis (Tenn.) converting plant, is now resident engineer, and *M. F. MORTENSEN* is plant engineer.

C. C. STEWART is now fabricating and shipping superintendent at U. S. Gypsum Co., mill at Greenville, Miss. *S. O. NEYNAN* is quality superintendent.

A. H. MASON is now extract plant superintendent at The Mead Co.'s Harriman, Tenn., mill; and *G. E. BUTLER* is master mechanic.

C. B. ALBRECHT, Cainhoy, S.C., was elected president of the Southern Pulpwood Dealers Conservation Assn. at the annual meeting. Other officers named included *TROY BRANNON*, Brewton, Ala., vice president.

F. J. ALBRECHT has been named conservation forester for International Paper Co., for Georgia with headquarters at Albany. He succeeds *W. E. GIBBONS*, who was transferred to Mobile.

ED. C. GRIFFIN, forester graduate from University of Florida, has joined S. E. Peck, Valdostal, Ga., pulpwood shipper to Union Bag & Paper Co.

ROBERT C. SUTTLE recently opened an office for Reliance Electric & Mfg. Co., Cleveland, Ohio, at 202 N. Washington St., El Dorado, Ark. Mr. Suttle came to the territory from the technical end of the company's production. He serves under *FRANK DENISON*.

C. R. RIGBY has been named manager of the Houston, Texas, manufacturing plant of A. O. Smith Corp.

GAIUS WHITFIELD has been named director of the newly created training division of Gulf States Paper Corp.'s personnel dept. He graduated from U. of Ala. in 1942; served as captain in Army antiaircraft in Europe in World War II.

H. PALMER WEBB, formerly associated with the Central Paper Co., opened his own paper house in Jackson, Miss., on June 1, as the Webb Paper & Box Co. A World War II veteran, Mr. Webb is a past member of the executive board of National Paper Trade Assn.

"Judge" Bill Cary Dies at Age of 68

Following a long illness, William M. Cary died April 14, at the age of 68, in Jacksonville, Fla. "Judge," as he was called, had been with the National Container Corp. since 1939, his last post being production manager of the Kraft Pulp and Board Division in Jacksonville.

"Judge" started in the industry in 1912 with the mill at Moss Point, Miss. His contributions in development of equipment for a spray type recovery furnace for black liquor recovery and for feeding alum following refining of pulp, are well known. The "Judge" was charter member of the Southern Division of the Mill Superintendents Association.

Changes at Gulf States

Reorganization of plant engineering division of Gulf States Paper Corp., Tuscaloosa, Ala., has been effected with the plant engineer being made a staff member under W. G. Reynolds, production manager. Under the new set-up, C. L. Phillips, chief engineer, will continue to report directly to C. M. Ayres, the plant engineer. Also reporting direct will be H. M. Rutledge, the storekeeper; E. B. Clements, power foreman, and L. M. Comer, general maintenance foreman. Reporting to the general maintenance foreman will be E. M. Curtis, chief electrician; John Nix and Dewey Herrien, as maintenance foremen; and, James Ball, machine shop foreman. E. J. Boudreaux will serve as advisor to the power foreman; and R. J. Hersh as advisor to the general maintenance foreman.

Protect your investment....

with a **SMITH & WINCHESTER**
MODEL "E"
UNDERCUT TRIMMER

Completely new and massive design, heavy duty construction, two-hand starting, illuminated index tape, and push button controls for electric power back gauge drive. (Gear guards have been removed to show main drive.)

Paper Making Machinery
Bag machinery for single and multi-wall bags of pasted and sewed valve type Rotary Spot Cutters, hand or automatically controlled Shower Pipes.

YOUR investment in finished stock is large, particularly just before the trimming operation. Rejects and spoiled work resulting from faulty or inaccurate trimming are costly. Protect this investment with Smith & Winchester Model "E" Trimmers designed to meet today's needs for fast production, hairline accuracy and safety. Look into all the new features of the Model "E" Trimmer.

Write for Bulletin!

THE SMITH & WINCHESTER *Manufacturing Company*
SOUTH WINDHAM, CONN.

SERVING THE PAPER INDUSTRY SINCE 1939

We offer Sincere Congratulations to

COLUMBIA CELLULOSE CO., LIMITED

WATSON ISLAND, B.C.

On Your Fine Contribution to the Pulp & Paper Industry.
We Are Proud of the Installation of Our Complete Efficient Pulp Drying Machines, DeZurik Valves, APMEW Pulpers & Screens in Your Mill.
Your Selection of Our Patented Equipment Constitutes An Endorsement of Outstanding Significance Which Is Much Appreciated.

For Best Quality and Low Cost Production

P.M.L.—KAMYR WET MACHINES —PATENTED— KAMYR BLEACHING EQUIPMENT
S.F. FLAKT DRYERS SPIRAL HEAT EXCHANGERS
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Supplied by us for best quality and lowest cost of production to meet world competition
for Modern, Economical Machinery and Methods please enquire from

PAPER MACHINERY LTD.
PAPER MILL EQUIPMENT LTD.
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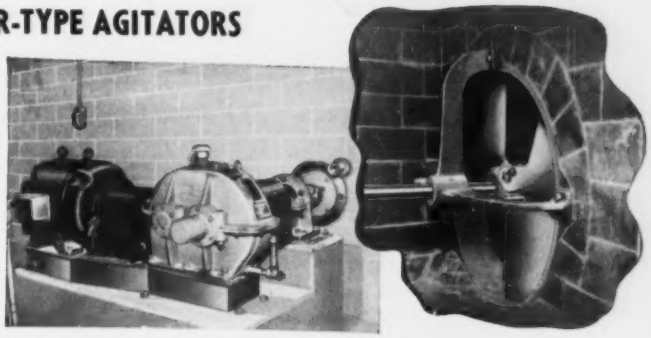
HEAD OFFICE: 921 Sun Life Building, Montreal, P. Que., Canada

Essential Equipment **IN THE COLUMBIA CELLULOSE MILL**

35 KENNEDY PROPELLER-TYPE AGITATORS



All the impellers are of stainless steel, 54" diameter, with adjustable pitch blades. These impellers are specially designed for high efficiency, with correct pitch and R.P.M. for conditions prevailing in each individual chest.

All shafts are of stainless steel.

The wall rings and crossarms were supplied in various forms—some are of stainless steel, others in Ni-Resist iron, and the balance rubber covered.

Kennedy-Falk Right Angle Speed Reducers, 97 to 98½% efficiency, are used to drive all of these agitators. The electric motors for the various drives vary from 25 H.P. to 60 H.P.

KENNEDY PROPELLER-TYPE AGITATORS • KENNEDY-FALK SPEED REDUCERS
MORDEN STOCK-MAKERS • KENNEDY-JONES PULP MASTERS
ROBERTS RING GRINDERS • KENNEDY-FALK PAPER MACHINE DRIVES
Bulletins and technical data available.

THE WILLIAM KENNEDY & SONS LIMITED

OWEN SOUND, ONTARIO
A Division of the Millspaugh Limited Group

PRODUCTION PROBLEMS
got you up a creek?

● The function of our Technical Sales Staff is to help solve various production problems in the field. These men are constantly working with new products and techniques—perhaps this experience would be helpful in smoothing out production sore spots in your operation.

Our basic, continuing research in starch chemistry is unsurpassed . . . under the direction of the foremost research men in this field.

Make the most of these facilities . . . no obligation of course.

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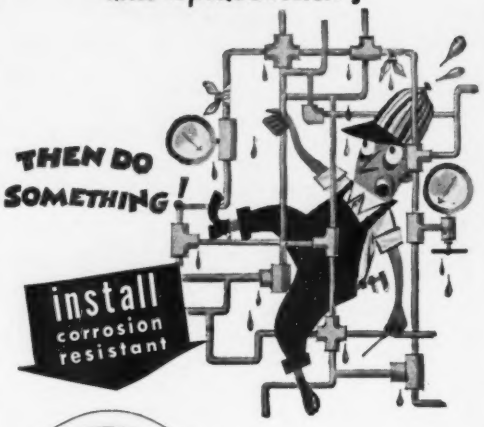

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BILL JENKINS (left) recently named Paper Mill Superintendent at Crossett Paper Mill, Crossett, Ark. His promotion was in accordance with company policy of elevating qualified personnel from within the organization.

CHARLES A. CONNAUGHTON (right) named Regional Forester at Atlanta by U.S. Forest Service to replace J. Herbert Stone, transferred to Portland, Ore. A graduate in forestry from Idaho U. in 1928, Mr. Connaughton was born in Placerville, Idaho. Has Master's Degree from Yale Forestry School. Mr. Connaughton has been Director of Southern Forest Experiment Station, New Orleans, since 1944.

LEADERS OF THE WOODLANDS SECTION, Canadian Pulp and Paper Association, are shown in this group photograph taken for PULP & PAPER at Montreal during the annual meeting (story last month). They are members of the Section's 1951 Council. Sitting, left to right: J. H. MERRILL, Anglo-Canadian Pulp & Paper Mills; J. B. MATTHEWS, Abitibi Power & Paper Co.; GORDON GODWIN, (Chairman of Section) Ontario Paper Co.; R. G. MACFARLANE, Fraser Companies. Standing—R. S. ARMITAGE, Price Brothers & Co.; W. F. McCOLM, Donnacona Paper Co.; L. L. WETMORE, St. Lawrence Paper Mills.

Description of New Oliver-Ahlfors Screen

As mentioned elsewhere in this issue, the new Oliver-Ahlfors screen, which pulp flows upward through gently vibrating screen plates, may be ready for trial tests at the Camas mill of Crown Zellerbach prior to the arrival of delegates in Portland, Ore., for the Superintendents' Convention. It is the first installation in the far West.

The new Oliver-Ahlfors is described as a compact flat screen, capable of screening at much higher consistencies than former types. It saves space, pumping and thickening cost, according to Oliver engineers.

The pulp upward flow also has the advantage of letting heavier material stay on the bottom of the vat, out of contact with the screenplate. The rejects flow towards the outlet and are continuously removed. The diaphragm plate and sturdy but simple vibrator are supported by four adjustable springs. The screen itself is mounted on rubber. The top is enclosed by a hood with plexiglass inspection windows. An automatic shower keeps the screen slots open. To prevent contamination, corrosion resisting materials are used, where in contact with pulp.

A number of units have been sold in Europe and other parts of the world, since the screen was developed a few years ago. The screen is in use as primary or tailing screen on bleached sulfite, bleached kraft, as well as on unbleached pulp.

Powell River Sales

Several new appointments in the executive staff of Powell River Sales Co., Vancouver, B.C., have been announced. William Barclay has been promoted to chairman of the board from vice president. M. J. Foley has been appointed president; he is also executive vice president of Powell River Co. R. W. Foote has been promoted to the vice presidency of the sales company from manager. R. G. McHugh is named manager and R. C. MacKenzie, formerly assistant secretary, is treasurer and assistant secretary.

NEW WASHINGTON HOT PRESS FORMS PLASTIC-FACED PLYWOOD

Above: Press is loaded, ready to start another automatically timed and pressure-controlled cycle.

Right: View from loading side with panels being subjected to heat and pressure. Six 12" hydraulic cylinders exert total "push" of 850 tons.

Production of plastic-faced "Armoren" plywood panels was recently begun by Anacortes Veneer, Inc., Anacortes, Wash., using the new hot plate press shown above. The 850-ton press was designed and manufactured by Washington Iron Works to specifications requiring especially close tolerances, long life, and fast, automatic operation.

OTHER WASHINGTON PRODUCTS engineered for maximum production efficiency include "Trakloader," and other logging equipment, hydraulic barkers, pulp baling presses and paper dryers.

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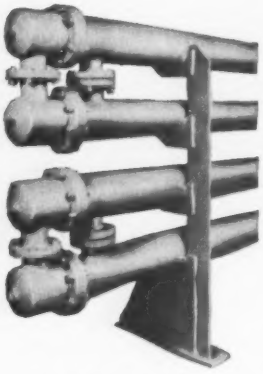

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Seattle Wash.

CORROSION—*Cont. from page 89*

additional experience with tests in fixed alkalies of relatively high concentration and temperature. Generally, chromium is an effective alloying element for resisting attack by alkaline sulfide solutions, but nickel is a very effective alloying element for resisting attack by fixed alkalies. Hence the 18-8 stainless steels show good resistance to attack by sulfate black liquors. It is possible that the chromium iron alloys may have some usefulness in the weaker effects, but economics will play a large part in carbon steel is fairly good in these effects.

Q: Has there been much use of clad steel in the industry and how about their general availability?

A: The clad steels, namely stainless clad and nickel alloy clad, have been used extensively and represent in many cases economic choices. Their availability today will closely parallel the availability of the corresponding solid metal or alloy.

Q: Have sprayed coatings been used extensively in protecting digesters?

A: There have been test patches of sprayed coatings installed with favorable reports. Sprayed coatings are rather porous and hence, as liquor penetrates the porous coating, galvanic effects, or cells, are likely to be set up between sprayed metal or alloy (the cathode) and carbon steel base (the anode). Results could cause the sprayed coating to lose adherence and fall off. In test patches, perhaps this underfilm corrosion did not occur because of overall galvanic effects of the patch itself with relation to the steel digester. In this case the area of the anode, i.e. the carbon steel, would be very large in respect to the area of the cathode, i.e. the sprayed patch, and hence, the patch itself would be cathodically protected which would tend to minimize local galvanic effects occurring at the interface of the sprayed alloy and the carbon steel base. This may account for favorable reports.

(At this point the questioner commented that his company had in operation for three years a digester with the entire surface metalized, and the successful performance thereof had led them recently to metalize the interiors of 40 other digesters).

Q: What has been the alloy used in kraft digesters which have reportedly failed in service, and are you acquainted with the cause of failure?

A: This is a large question. The failures I happen to know about involved types 304 and 347 stainless steel. Some were field applied linings, and some shop-applied. I believe in practically all cases, cooking liquor inadvertantly accumulated behind the lining and in time became quite concentrated. The 18-8 stainless steels are subject to stress corrosion cracking under such conditions. That is the way the linings failed. It is considered far more hazardous to use stainless as a field-applied lining than as shop-applied. Many of the latter type are giving a good account of themselves. I know of no field-applied 18-8 stainless steel linings which have been satisfactory.

HARRISON—*Cont. from page 90*

struments should be selected with care and after a thorough study of what their performance would be in the specific application required.

Other Sessions

At other sessions, G. K. Wate, of Powell River Co., spoke on sulfite digester relief gas recovery, and Joe Askew, chief engineer, Bloedel, Stewart & Welch, dealt with some aspects of recovery operation. A panel discussion on box board and converting plant problems was contributed to by Marion F. Smith, technical director, Sidney Roofing & Paper Co.; J. L. Godding, Pacific Mills; J. H. McMillan, Westminster Paper Co., and F. P. Haszard, Bonar & Bemis, Ltd.

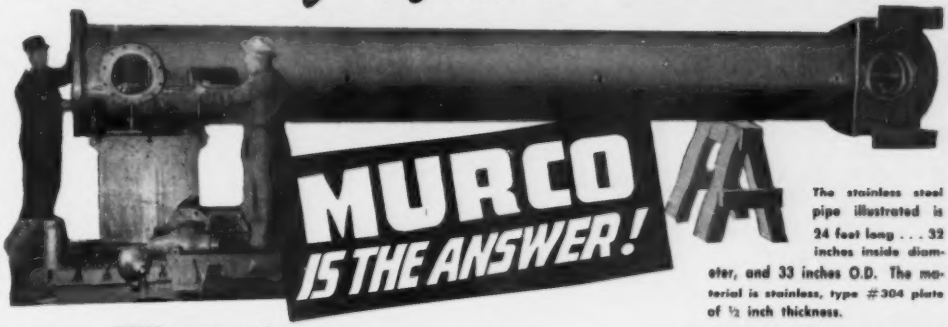
Principal guest speaker was R. Logan Mayhew, vice president, Sidney Roofing & Paper Co., chairman of the branch, who reviewed British Columbia's forest problems. Rising prices for the securities of wood-using companies with extensive forest holdings reflected, said Mr. Mayhew, a growing recognition of the value of basic raw material.

The new chairman of the technical section is Morley Patterson, kraft superintendent, Pacific Mills, Ocean Falls, and first vice chairman is M. F. Smith, Sidney Roofing & Paper Co., with Keith Eadie, plant engineer, Bloedel, Stewart & Welch, Port Alberni, second vice-chairman, and Mel Oke, Vancouver Paper Box Co., secretary-treasurer. Retiring officers were John Guthrie, of B.C. Pulp & Paper Co., as chairman and W. R. Dickie, as secretary-treasurer. More than 100 attended the sessions.

VIEW ON LEFT is group picture of Southeastern Superintendents on steps of Baptist Church in Richmond, Va., where they met May 4-5. In exactly this same way, a group picture of this same organization was taken 25 years ago on the same church steps.

ABOVE RIGHT (l. to r.): Carl T. Welte, of Champion, Chairman of Southeastern Supts.; Cecil B. Curry, National Container of Va., Vice Chairman; Howard S. Donald, President, Standard Paper Mfg.; Wm. H. Brydges, Past President of Supts.; and Harry W. Deffew, Standard Paper Mfg., Chairman of Richmond Convention Committee.

whether it's STAINLESS STEEL PIPE
24 feet long or just an ELBOW...



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Personals

PACIFIC COAST NOTES

W. J. PILZ, president and general manager, Everett Pulp & Paper Co., Lowell, Wash., convalescing from a long illness, is well enough so that recently he made a visit to all departments at the mill. His illness forced him to postpone plans for a trip to England.

LEO ZIEL, resident manager, Crown Zellerbach, Port Townsend, Wash., showed his good sportsmanship and loyalty to the Port Townsend pioneers' celebration—requiring all men to grow beards—by refusing to apply the razor even on his required occasional business trips to Seattle and elsewhere.

LEO S. BURDON, vice president and general manager, Soundview Pulp Co., is head of the city of Everett, Wash.'s Community Fund this year.

MELVIN CONSTABLE, first finisher in the Fibreboard Products, Inc., mill at Port Angeles, Wash., on military leave, was killed while serving as an Army paratrooper with rank of sergeant in Korea. He was just 21. He was born in Port Angeles and started in the mill as a broke boy in 1948.

HERB PETERSON, Weyerhaeuser's top instrument man; his lieutenants, *L. A. WENDT*, in charge at Everett, and *ROY POTTER*, in charge at Springfield; *CARL RAMSTED*, instrument department chief for Soundview, and *IVAR CAMPBELL*, Puget Pulp's instrument engineer, were among good listeners at the Canadian meeting in Harrison.

CLARK HAMILTON, whose move to the Everett Pulp & Paper Co., Lowell, Wash., as its technical director, from Allied Paper Mills in Kalamazoo was recently reported in these columns, has bought a home in the nearby city of Everett, Wash., on Grand Avenue, overlooking the harbor. His two children entered school in Everett.

MEDER JOHNSON, consulting engineer of Seattle and former chief engineer for Rayonier, is carrying on consulting work for the Japanese industry. In recent months he made a trip of several weeks to Tokyo and Iwakuni, near Hiroshima, the atom bomb city, where he assisted Sanyo Pulp Co. in adding two digesters to its four for sulfite pulping and modernizing its process. The mill is 40 miles south of Hiroshima.

LES "SPUD" HARTMAN, maintenance superintendent, Weyerhaeuser pulp mill, Everett, Wash., and *RADFORD RUSSELL*, assistant general superintendent, Everett Pulp & Paper Co., can compare notes easily in keeping tab on their daughters, Polly Hartman, and Sandra Russell, both sophomores at Washington State College.

JOHN J. RYAN has been transferred to the sales force of the Pacific Division of the Nopco Chemical Co., said G. D. Davis, vice president in charge of sales, from the Nopco home offices at Harrison, N.J. Mr. Ryan was sales representative for the company in the New York-Pennsylvania area. A graduate of North Carolina State College, he has been affiliated with Nopco since 1946. In the Pacific territory he will continue handling the company's broad line of chemical specialties for such industries as pulp and paper.

KENNETH W. MONTFORT has joined Pennsalt of Washington, as district sales representative, it has been announced by *WILLIAM J. F. FRANCIS*, assistant manager of sales of the West Coast organization. Mr. Montfort will make his headquarters at the Portland, Ore., office and will devote his time to the sales and service of agricultural and industrial chemicals in Oregon, Colorado, Utah and Southern Idaho. He will report to *L. M. SHANAMAN*, assistant manager of Sales at Portland.

HARRISON F. DUNNING, general operating manager of all Scott mills, and Henry S. Godshall, plant manager of the Empire, Ore., pulp plant, have been made vice presidents of Coos Bay Pulp Corp.

NEW MEMBERS OF THE BINGHAM PUMP CO. (Portland, Ore.) sales organization (l to r): DAVID G. SEABURY, graduate of Southern California, who will base at San Francisco; JASON WEISSENBURGER, West Virginia U. graduate, who will base at St. Louis, and WALTER R. JARRETT, Missouri School of Engineering grad., also basing at St. Louis.

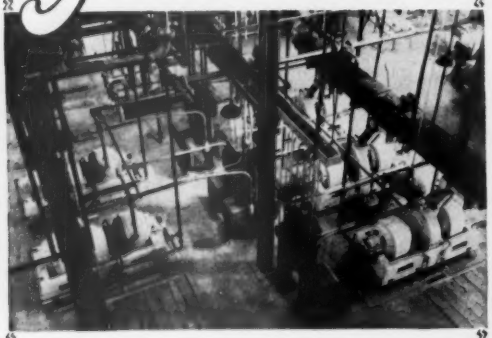
Jenssen Will Name Coast Representative

Frank J. Hoar, president of G. D. Jenssen Co., Inc., Watertown, N.Y., after a conference in Seattle with A. H. Lundberg, chemical engineer and representative of several pulp and paper industry suppliers, announced termination of the relationship between Mr. Lundberg and the Jenssen Co.

In the near future, Mr. Hoar will name a new exclusive representative on the Pacific Coast for the Jenssen organization, as designers and builders of acid plants, sulfite recovery plants and semi-chemical plants. Meanwhile, all West Coast business will be handled through the Watertown offices.

KEN EAST, who is in charge of the power plant at Weyerhaeuser, Springfield, Ore., was born of Swedish parents in Burma.

Semichemical chips defibered by 5 Bauer Pulp Refiners



The above reproduction fails to do justice to one of the most spectacular commercial photographs we have ever seen. It was taken by Lefebvre-Luebke at the new mill of Green Bay Paper & Pulp Company, and is published by us with permission.

Here are five Bauer Pulp Refiners arranged in lines of three and two machines respectively. Semichemical chips are fed to the refiners through chutes. Each chute is equipped with a Bauer Permanent Magnetic Separator for removing tramp iron. Water is added to the chips by showers in the chutes to effect the desired consistency for fiberizing. Subsequent showers are used for further diluting the pulp.

This is an example of the hundreds of Bauer Pulp Refiners in operation throughout the world for pulp and stock processing. The materials treated include raw, steamed, extracted, or semichemically cooked chips; many types of screen rejects; raw pulp, old paper, straw, and numerous kinds of fibrous residues.

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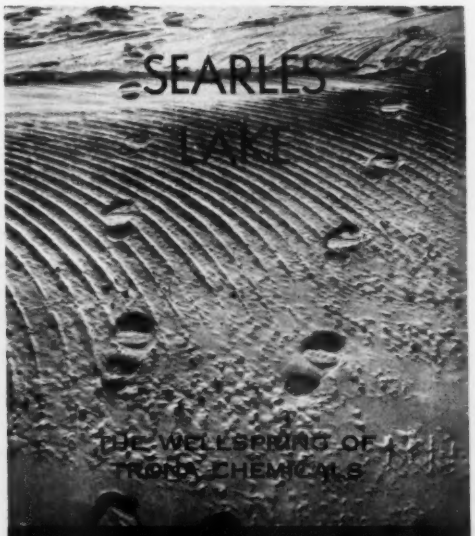

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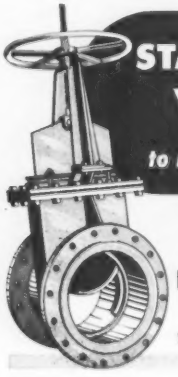

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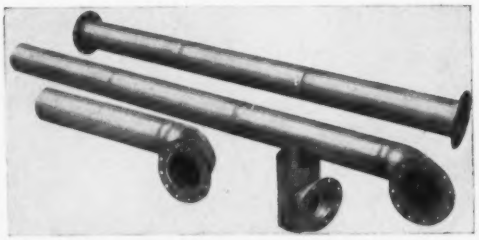

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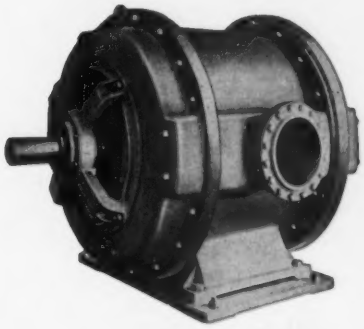

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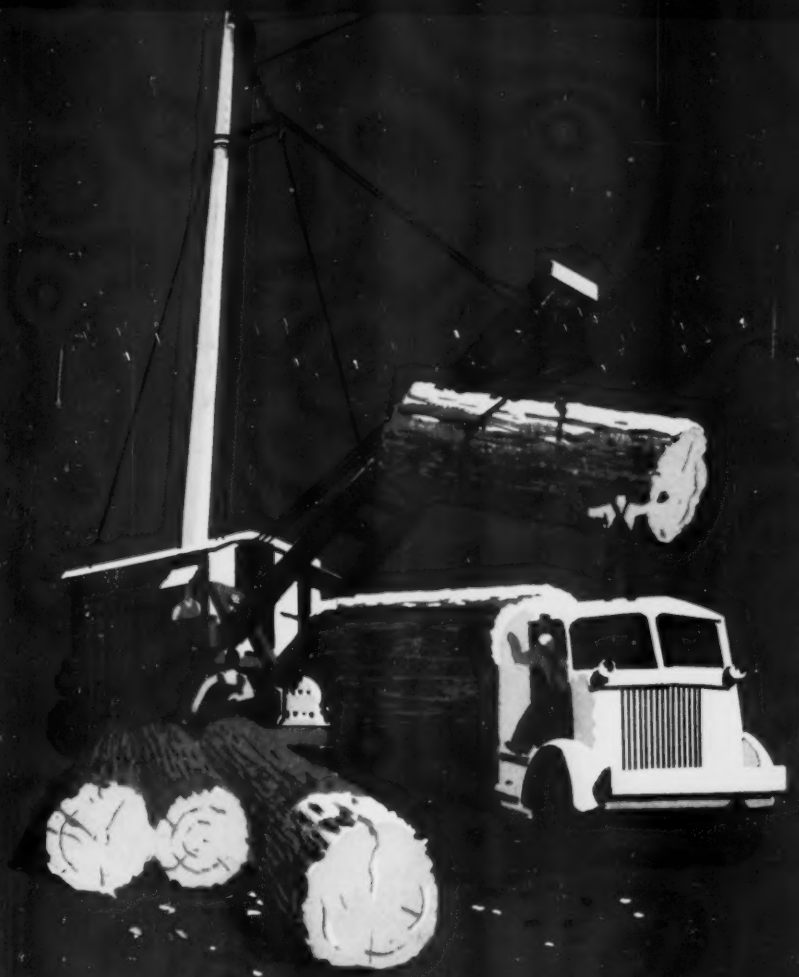

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